ARTICLES IN THIS ISSUE DISCUSS:

QUALITY CONTROL
For the Small Mill
Starts on page 99

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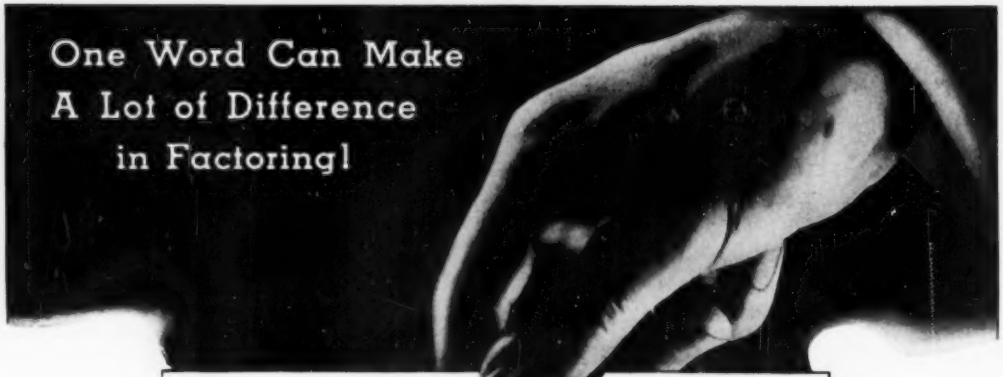

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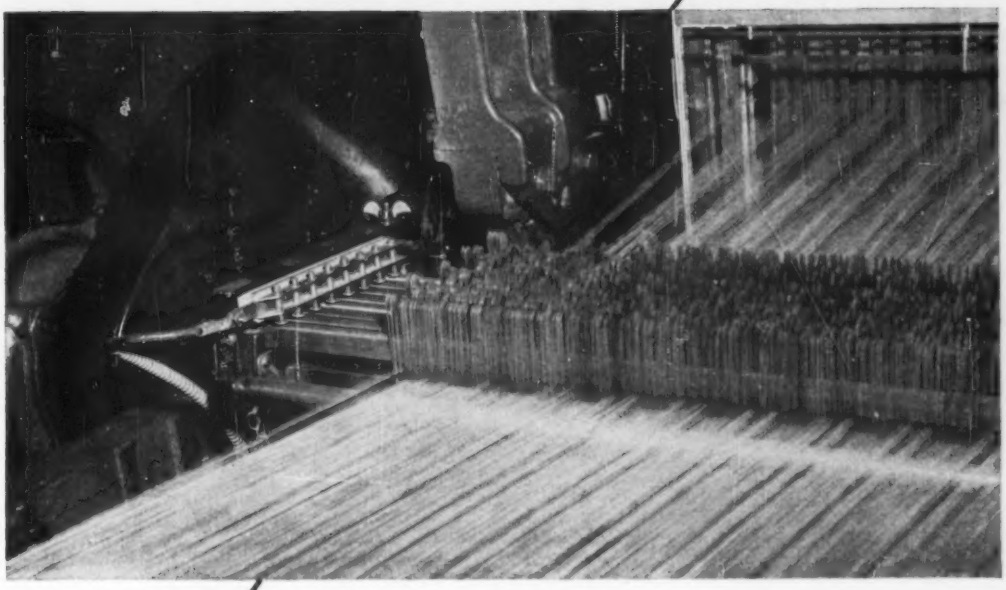

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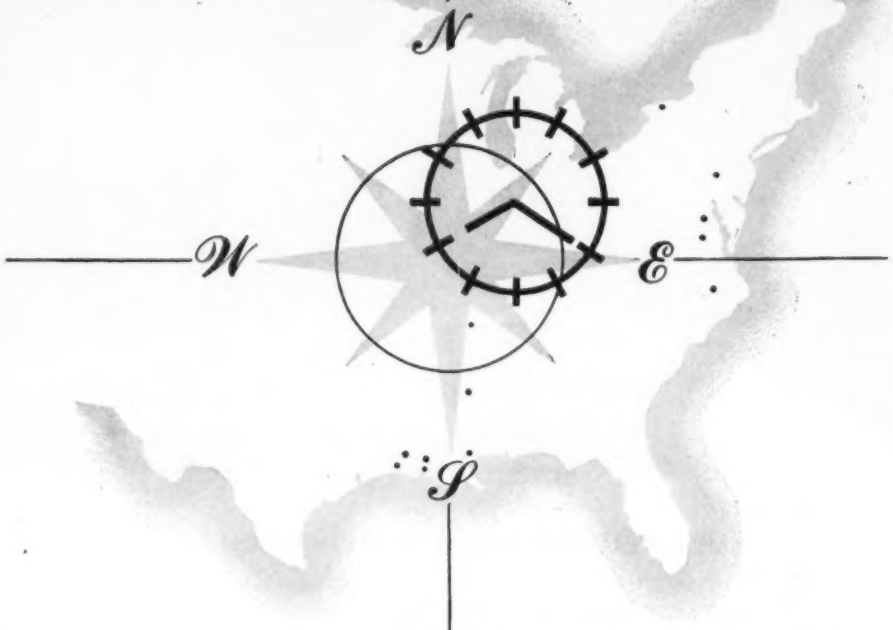

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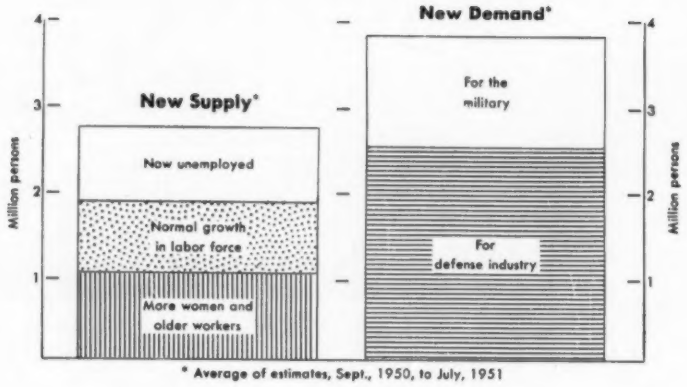
THE Long-Range VIEW



Manpower Shortage

The announcement of a state of emergency and of mobilization will hit the textile industry hard, particularly in regard to manpower. Even before this announcement, the McGraw-Hill economics staff estimated a shortage of over a million workers between September, 1950, and June, 1951. Mr. Robert Ulin of that department considered the various estimates that have been made and in the nation as a whole saw a total new supply of workers for that period as being 2.7 million, made up as follows:

Women and older workers attracted by new opportunities	1.1
Normal addition to labor force	0.8
Employed from the 2.3 million unemployed	0.8

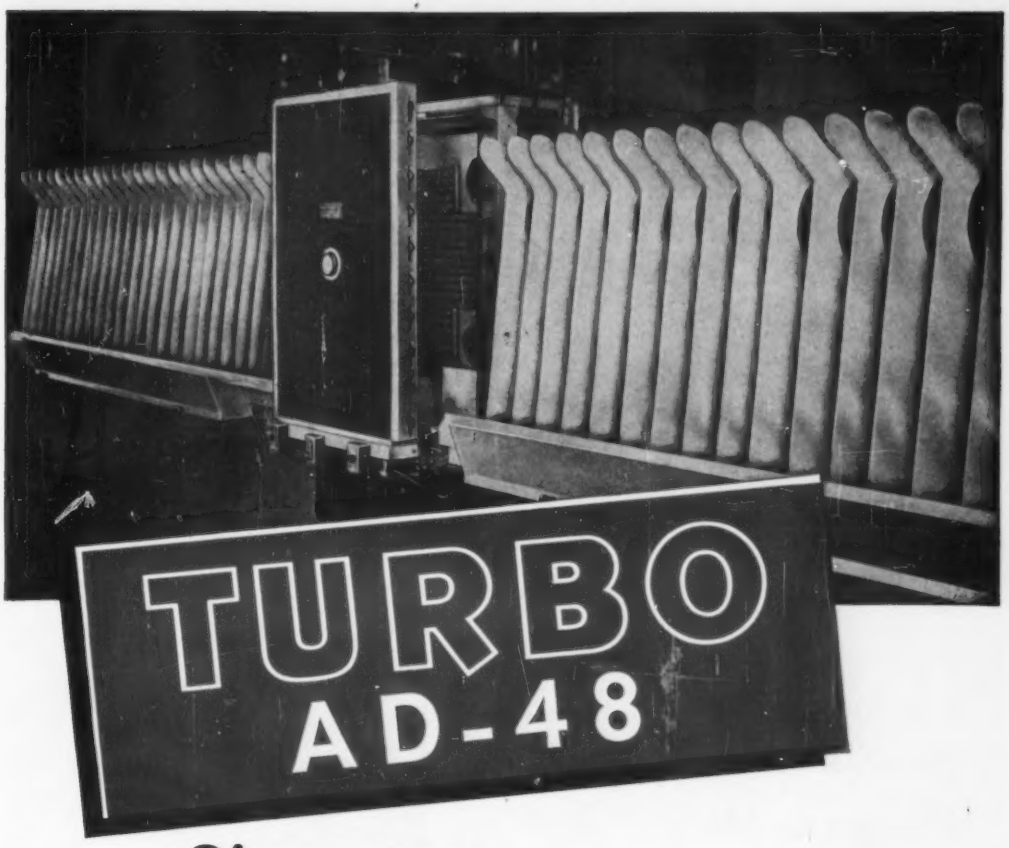
Against this new supply, Mr. Ulin estimated a new demand of 2.5 million for defense industry and 1.3 million for the military. With all-out mobilization and the declared state of national emergency, this demand will increase. Just how much, no one knows or is likely to know for months; but there is not in sight any appreciable supply of manpower beyond that itemized.

What can textile mill managers do? You can't depend on pirating. There might even be a manpower freeze. Satisfactory workers will be increasingly harder to get. Important men will have to be replaced as they are taken by the military or are attracted away to war jobs. Of the many things that can be done, however, the most important will be to train your own new people after selecting them from that group which has natural ties to your area or particular plant. For example, try to get new employees from relatives of present employees, from graduates of your local schools, from employables in your community through your local USES.

Materials problems, of course, will be hectic, particularly with the current shortage of wool and synthetics and the threatened shortage of cotton. Fortunately, many textile mills had anticipated their equipment needs and have their orders placed, but deliveries may be disrupted by Defense Orders (DO's) or other priority arrangements. The scramble is sure to begin for orders for government fabrics so as to help mills get machinery, materials, and fibers. The gray market for synthetics may turn black.

The best thing every textile manufacturer can do is to review the steps that he took during World War II and begin immediately to apply the ones that proved more successful. As during the last emergency, TEXTILE WORLD will place emphasis on information mills will need to know concerning military fabrics and concerning operations during such an emergency.

C. H. Bendigo



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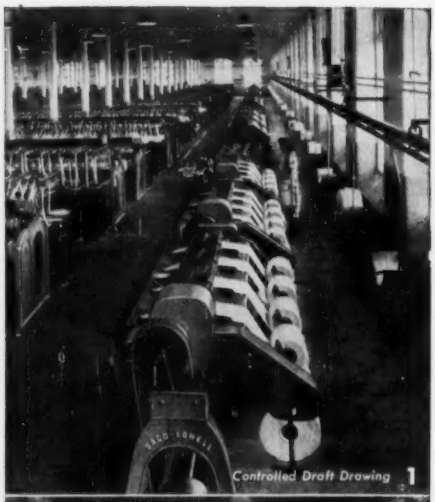
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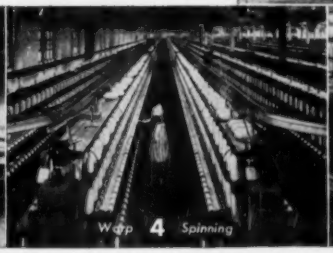
FS-2 Roving 2

5 Spinning with Shaw Drafting Unit Assembly


Warp 4 Spinning

New Era Spindles on Warp Spinning 3

PHOTOS: Nos. 1 and 3, Pelzer Mills; Nos. 2 and 5, Dominion Textile Company, Limited; No. 4, Pacolet Manufacturing Company.

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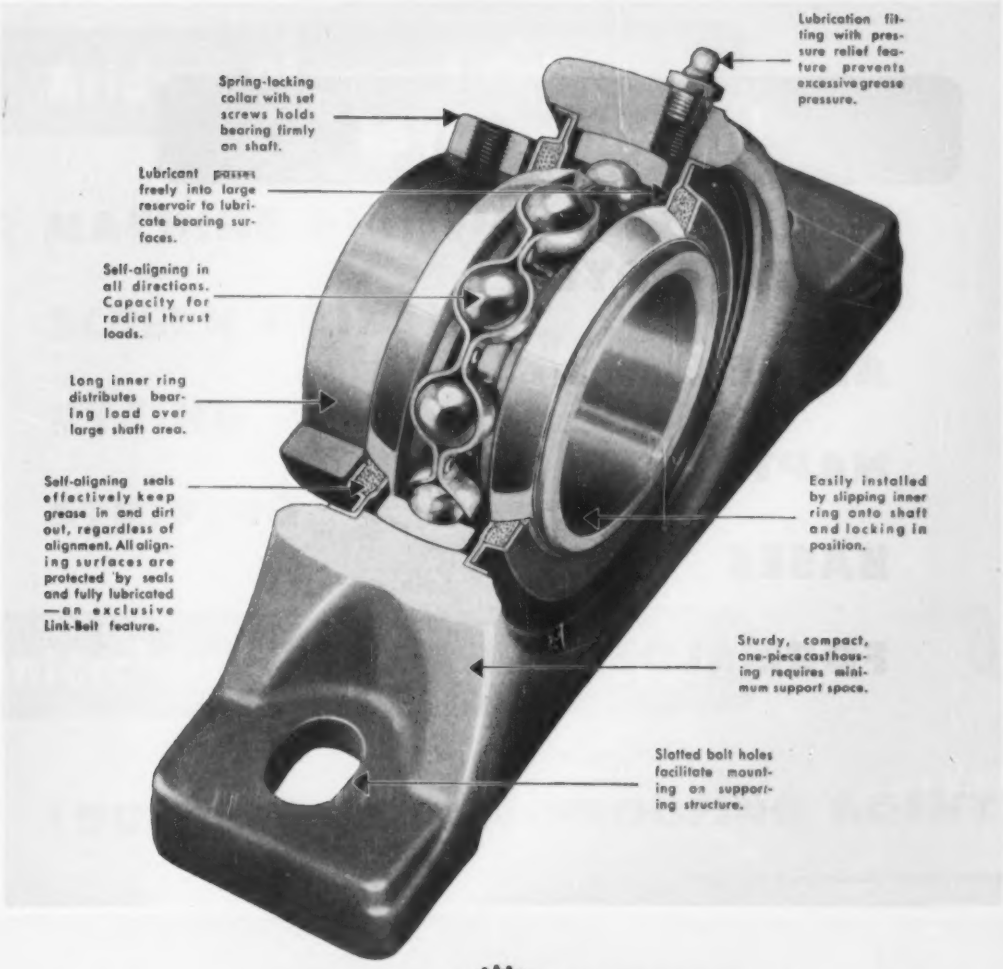
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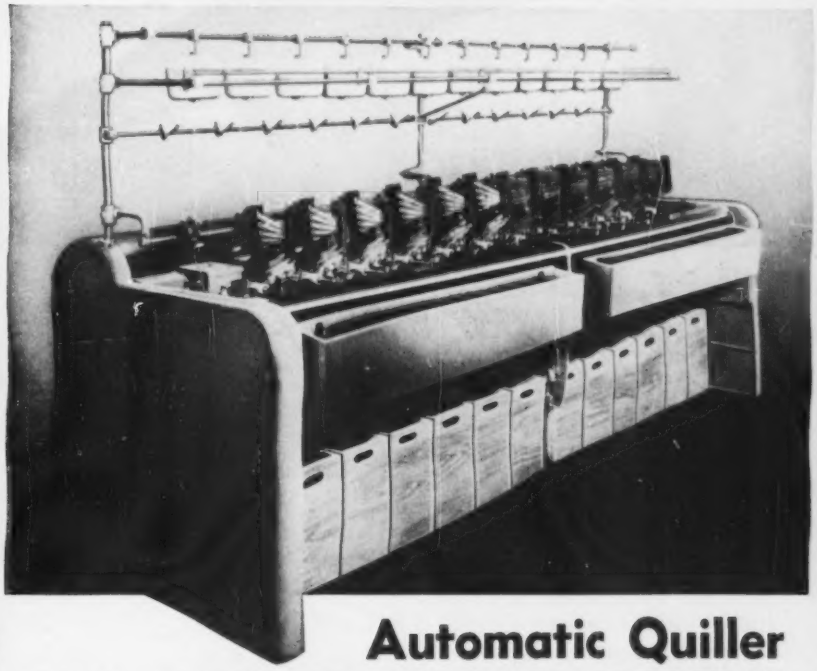

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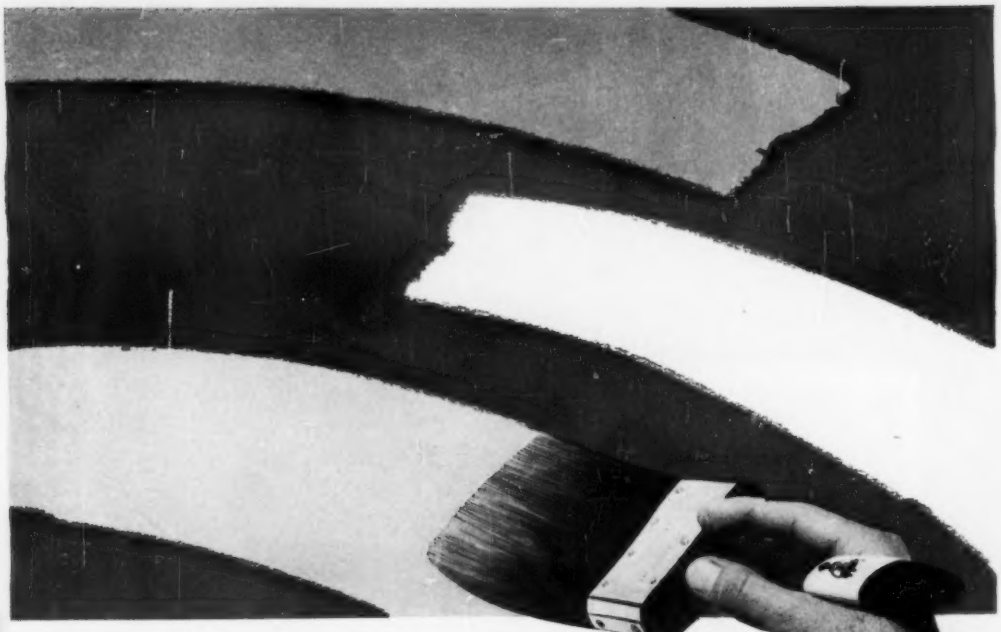

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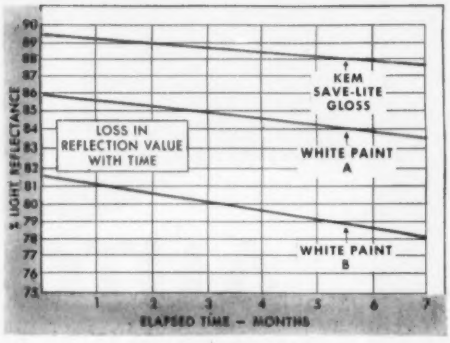

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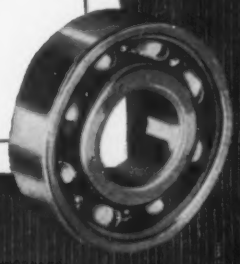

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...THROUGH CHEMISTRY

FOR NYLON...FOR RAYON

ACETATE DIVISION • NYLON DIVISION • RAYON DIVISION—

the "F" turns out to be FIBER!

Funny thing about a fabric . . .
Somebody has to think it up,
Somebody has to say it's good,
Somebody has to produce it,
Somebody has to find a fiber.

For quality fibers . . .
fibers that have found their way into exciting, talked-about fabrics,
fibers that have kept those fabrics sound . . .

Du Pont **nylon**
Du Pont **acetate rayon**
Du Pont **viscose rayon** are the beginnings
of the fabrics and fashions of tomorrow.

And Du Pont is looking ahead to fibers
that will make tomorrow's fashions
even more exciting, wearable, long-livable!

. . . FOR FIBERS TO COME . . . LOOK TO DU PONT!

Rayon Department, E. I. du Pont de Nemours & Co. (Inc.), Wilmington 98, Delaware

Streamlining a Pension Pattern

TO FIT YOUR BUSINESS

THE success of your pension plan will depend upon a streamlining job which gears your pension system with *your* particular financial, personnel and industrial problems. And, if your pension plan is not streamlined to fit your company's circumstances, you may suffer serious loss in dollars and greatly reduce the effectiveness of your plan.

Our Pension Trust Division has helped develop hundreds of pension plans. This broad experience with all types of pension systems is yours for the asking. We shall be glad to estimate the cost of a pension plan for your company or discuss with you any pension problem you may have. No obligation, of course.

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HEAD OFFICE: 22 WILLIAM STREET, NEW YORK
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SANDOZ PRESENTS *The color achievement of the month*

Crepe Expectations ...BY MILLIKEN

She can be as confident of the evernewness of the fabric's appearance as she is of the fashion-rightness of its cut.

For such fabrics as Milliken's Dress Crepe . . . 50% wool, 50% worsted . . . Sandoz offers colors of perpetual youth — fast to weather, perspiration, dry cleaning and pressing.

And to the dyers of such fabrics which, being lightweight, should be exposed a minimum length of time to the dye bath, Sandoz offers dyestuffs with maximum levelling properties. For example:

ALIZARINE LIGHT BLUE 4GL
XYLENE LIGHT YELLOW 2G
XYLENE FAST RUBINE 3GP

These colors are also fast to carbonizing and have the light fastness desired for quality dress goods. Remember them to get the double value of long color life and economical processing.

And for *any* chrome, acid or direct dyes . . . or auxiliary chemicals . . . for both natural and synthetic fibres . . . be guided by the successful "color achievements" you see in these Sandoz advertisements.

DIRECT-DYE COTTON AND RAYON WITH CUPROFIX FOR WASH FASTNESS

New CUPROFIX colors and after-treatment give fastness to washing, light, etc., that formerly required more expensive vat dyeing. Write for booklet on CUPROFIX, already adopted by dozens of mills.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N.Y.

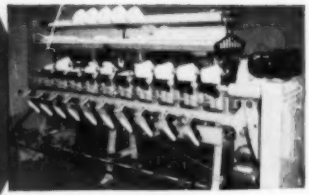
Application laboratories and stocks at Boston, Philadelphia, Charlotte, Chicago, Los Angeles, Toronto • Other branches at Providence, Paterson and Montreal

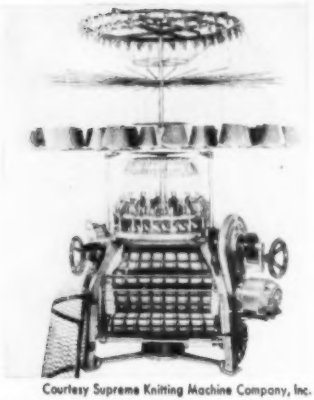
SANDOZ *thinks ahead with textiles*

YARN WOUND ON THE ROTO-CONER*

Improves Results

IN THE NEXT PROCESS





Courtesy Supreme Knitting Machine Company, Inc.

IN THE KNITTING MILL:

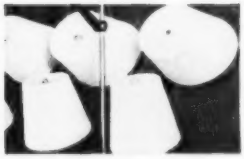
Fewer Press-Offs

Many knitters *specify* Roto-Cones because all imperfections have been removed by slubbing to provide perfect running conditions on the knitting machine. The increasing taper allows high-speed delivery without sloughing. And, with less breakage of short fibers, due to the Roto-Coner's* smooth one-piece rotary traverse, the yarn is *loftier*.

IN THE TWISTING DEPARTMENT:

Doubling Eliminated

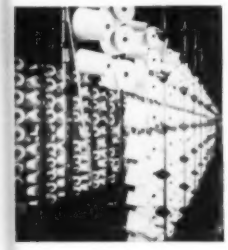
Doubling prior to twisting is eliminated when the Universal Roto-Coner* is used in conjunction with Atwood Model 10 Ring Twisters. Single end winding is faster than doubling. The cones (9° 36′, 9° 15′, or 3° 30′) are used as a supply for the Model 10 which, being equipped with single end stop motions, makes preliminary doubling unnecessary.



IN THE QUILLING DEPARTMENT:

Improved Quality

Automatic filling winders run without interruption from magazined cones. Accurate inspection, on the Roto-Coner*, of yarn wound from spinning bobbins increases loom efficiency and fabric quality.



IN THE WARPING DEPARTMENT:

Continuous Supply

Maximum warping efficiency can be obtained only from large packages of thoroughly-inspected yarn. Many mills today use Roto-Cones as a supply for their high-speed or jack spool warpers.

IN THE DYEHOUSE:

Even Penetration

Dyers consider that packages wound on the Roto-Coner* are superior for any system of dyeing. Soft packages are wound at 325 to 500 ypm with uniform density throughout and from spindle to spindle.

ROTO-CONER* THE FLEXIBLE WINDER

The Roto-Coner* winds a complete range of staple yarns onto a variety of package shapes and sizes. Rotary traverses are made in four standard groove arrangements and from either Bakelite or cast-iron.

*Reg. U. S. Pat. Off.

UNIVERSAL WINDING COMPANY

P. O. Box 1605 • Providence 1, R. I.

Boston, Philadelphia, Utica, Charlotte, Atlanta, Chicago, Los Angeles; Montreal, Hamilton, Canada; Manchester, England; Paris, France; Basle, Switzerland

Agents in every principal textile center throughout the world

ROTO-CONER* WINDER *The Textile Winder with the Rotary Traverse*

coming your way–

better finishes for your products

Have you tried any of the PLIOLITE latices in finishes for your fabrics? These resinous dispersions constitute a new family of raw materials for the textile industry. Indications are that PLIOLITE latices are fast coming into their own in permanent type fabric finishes.

Promising applications for these high-quality resins are in pigment binders, sizing and stiffening compounds, in crease-resistant finishes. Other high potential uses are in various specialized coatings and as impregnants and binders.

You can get a free sample for your evaluation, as well as full technical data, simply by writing:

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We think you'll like "THE GREATEST STORY EVER TOLD"– Every Sunday – ABC Network

Pliolite—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

we could promptly deliver all or any of its 487 parts

Naturally it would be more economical to deliver an *assembled Platt Card, but our manufacturers are so* well established . . . our parts-service departments so strategetically located that we could promptly deliver *any or all* of its parts. When you are purchasing any textile machinery, this availability of parts-service is an important factor. Atkinson, Haserick & Co. has faithfully supplied American mills for over a century.

An American Institution for 128 years

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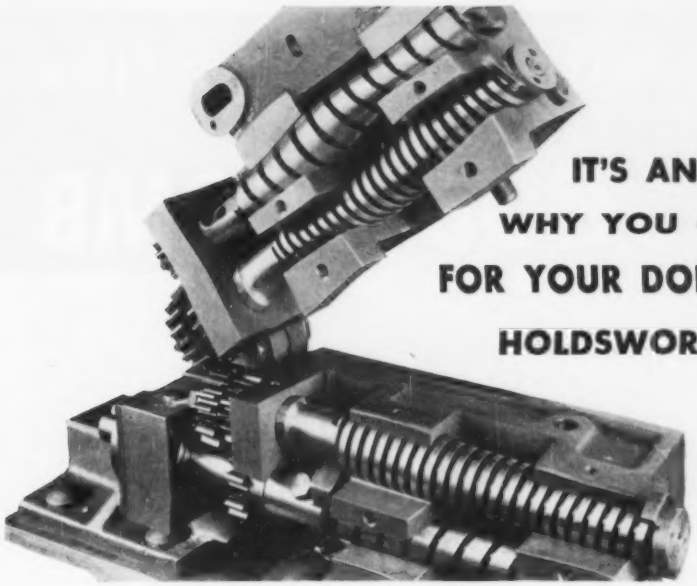
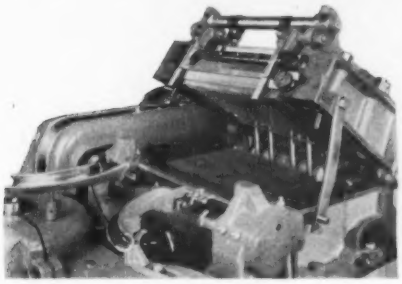
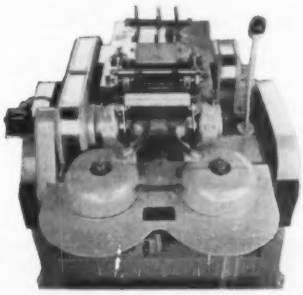


IT'S AN OPEN SECRET WHY YOU GET MORE FOR YOUR DOLLAR IN A HOLDSWORTH GILL REDUCER





Once you have seen a Holdsworth Gill Reducer in action and talked with its operator you will know the secret. You get two deliveries while investing in only one head and it's an exceptionally good head too! Precision screws are cut from solid bars of steel; Holdsworth fallers have their ends butt-welded to solid steel middles drilled for round pins; the screws are pretimed at the factory and remain that way when the head is opened for cleaning or faller replacement. There is no danger of jamming or the necessity of retiming when the head is again closed. The entire machine is well designed, sturdily constructed for long service, high production, low maintenance and easy operation. May we send you more information about its application to the abbreviated system?

HOLDSWORTH GILL SCREW CO., INC.

EXCLUSIVE SALES AGENT

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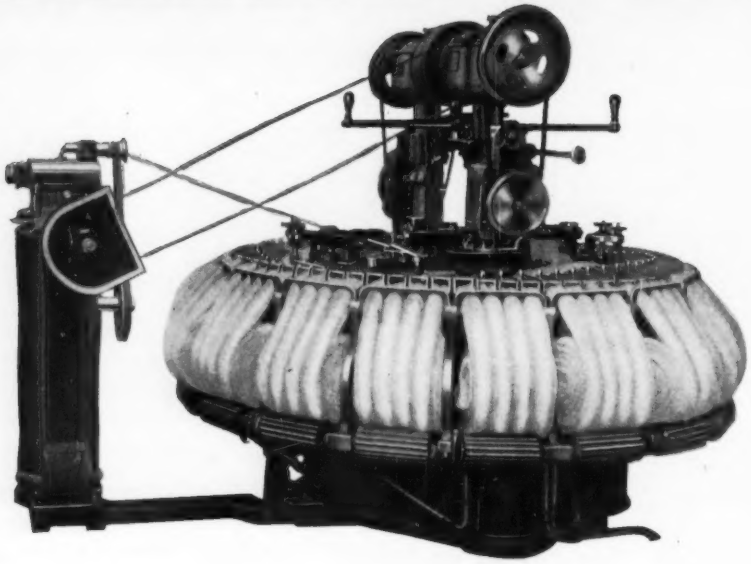
Prince-Smith & Stells' Improved NOBLE COMB



IMPROVED

Perfectly balanced dabbing motion reduces vibration and wear.

Circles with different pinning for certain qualities of wool and other fibers are interchangeable without disturbing the gearing.

New stop motion is highly sensitive to laps on the aprons. Eliminates risk of damage to drawing-off aprons and circles.

IMPROVED

P.S.B. roller stand allows adjustment of pressure while in operation and guarantees an absolutely equal pressure at each end of the roller.

New type circle cleaner raises residual fibers to the top of the pins.

The "Perfect" feed knife maintains ideal feeding conditions automatically and eliminates the human element.

P-S-S LTD.

PRINCE-SMITH & STELLS
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INCORPORATING TAYLOR WORDSWORTH & CO LTD.
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INQUIRIES TO *Agents, U. S. A.-French system machinery.* *The Blake Electrical Mfg. Co., 43 Commercial Wharf, Boston 10, Mass.*

SUPER MARKET of the Textile Industry

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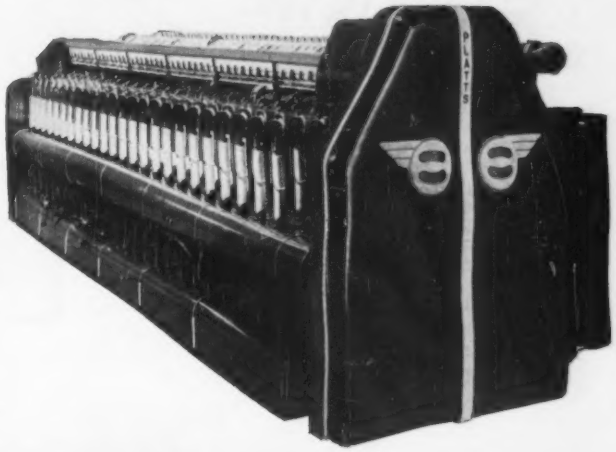
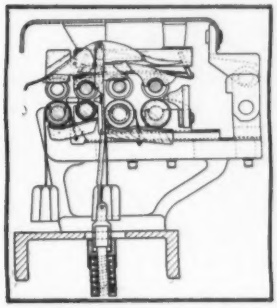
Agents U.S.A. and Canada—English system machinery

NEW PLATT HIGH DRAFT ROVING FRAME

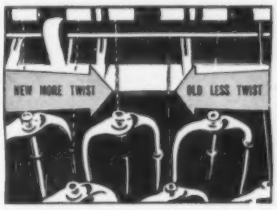
MS-2



Control of fiber and twist reaches greater perfection in the new Platt MS-2 High Draft Roving Frame. Patented flyers produce a roving of 20% greater strength, thus allowing a reduction in turns per inch and permitting higher front roller speeds. If you are interested in definitely increasing your production, you will want our eleven page booklet on "Roving" with seven mechanical detail illustrations of this new design machine. Write Atkinson, Haserick and Co.



TRIZONA: Graded and controlled drafting with the Trizona (Trade Mark) System will permit a wide range of drafts, using as it does 3 drafting zones with special patented guides for synchronized traverse and unprecedented fiber control.



BETTER TWISTING CONTROL: The new Patented Flyer overcomes breakage from tension in the flyer leg, around the presser, and onto the bobbin, as a greater proportion of the total twist is inserted between the nip of the front rollers and the top of the new flyer. The twist runs right up to the roller nip, giving greater twist regularity, and a more consolidated roving, permitting a greater length to be wound on the bobbin.

NEW FEATURES PERMIT GREATER MACHINE EFFICIENCY—HIGHER ROVING PRODUCTION

NEW ADVANTAGES

1. Production increases up to 15%.
2. Machine efficiency raised 20%.
3. End breakage rate reduced as much as 50%.
4. Waste accumulation decreased by 75%.
5. Unprecedented fiber control.
6. Remarkable roving strength and regularity.
7. Lighter work load.
8. Wide range of drafts.

NEW FEATURES

1. New patented flyer.
2. Patented fiber guides with synchronized traverse.
3. Integral motor drive.
4. Simplified electrical control.
5. Automatic measuring motion.
6. Building motion with gear change (optional).
7. Simplified gearing with easy and accessible changes.
8. Noise reduction.
9. Helical gearing for spindle and bobbin drives.
10. Neat disengaging motion.
11. Flush fitting rear inspection doors.
12. Centralized lubrication system.

MACHINERY OF:

PLATT BROS.

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INQUIRIES TO

SUPER MARKET of the Textile Industry

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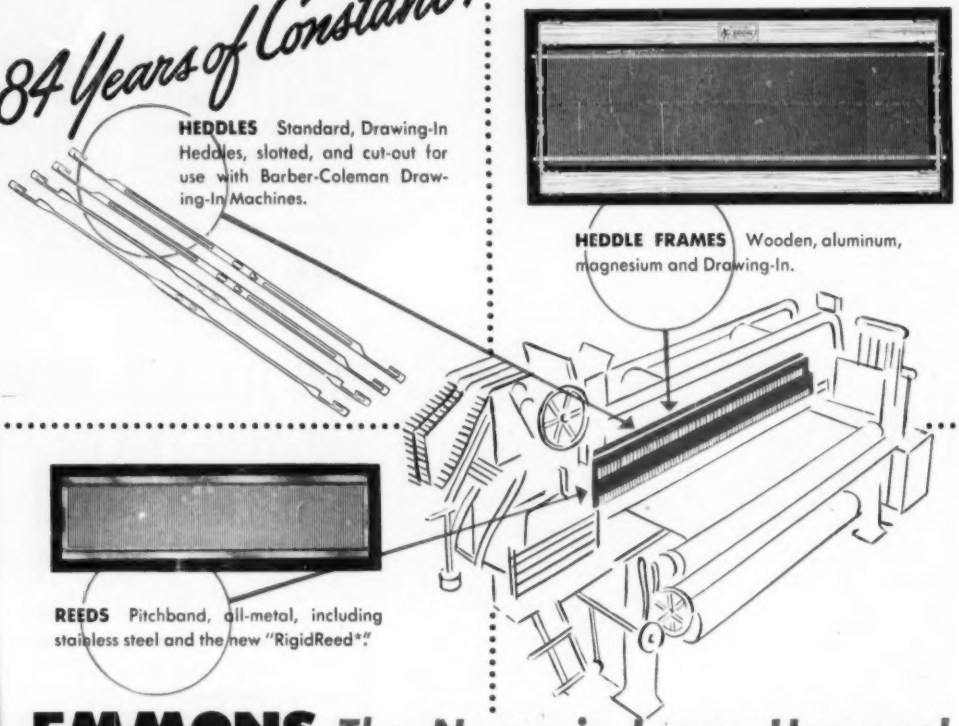
ESTABLISHED IN 1867

84 Years of Constant Product Improvement!



HEDDLES Standard, Drawing-In Heddles, slotted, and cut-out for use with Barber-Coleman Drawing-In Machines.

HEDDLE FRAMES Wooden, aluminum, magnesium and Drawing-In.

REEDS Pitchband, all-metal, including stainless steel and the new "RigidReed*."

EMMONS *The* Name in Loom Harness!

Again pacing the field, EMMONS has developed a new aluminum rib reed which is stronger, more rigid and more accurate. Write for full information on the *"RigidReed"** today.

You can always depend on EMMONS to be *FIRST* with the latest and the best loom harness!

* TRADEMARK REGISTERED; PATENT APPLIED FOR

EMMONS SELVAGE HARNESS • EMMONS SLASHER AND STRIKING COMBS
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(• Distributors in New England, Canada & Export — Manufactured by National Plastics, Inc.)

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FIRST LINE OF DEFENSE

America's Great Production Machine—once again the arsenal of democracy—runs on oil and grease. And, among buyers of industrial lubricants, Socony-Vacuum is the *first-choice supplier!* Here's why . . .

Famous Gargoyle lubricants are unsurpassed in quality—constantly improved by Socony-Vacuum research. They are backed by 85 years of lubrication experience . . . are recommended by more machine builders than the products of any other oil company. Performance records, in thousands of plants, prove they help increase production, reduce friction and power losses, lower maintenance costs.

Socony-Vacuum—with more lubrication engineers serving industry than any other oil company—can help improve production performance in *your* plant. Why not give us a call?

GARGOYLE Lubricants

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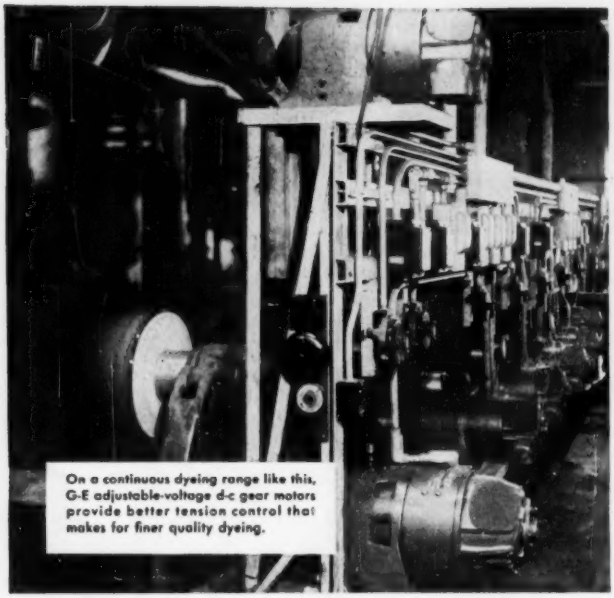
Correct Lubrication

WORLD'S GREATEST LUBRICATION KNOWLEDGE AND ENGINEERING SERVICE

SOCONY-VACUUM OIL COMPANY, INC., and Affiliates: MAGNOLIA PETROLEUM COMPANY • GENERAL PETROLEUM CORPORATION



On a continuous dyeing range like this, G-E adjustable-voltage d-c gear motors provide better tension control that makes for finer quality dyeing.

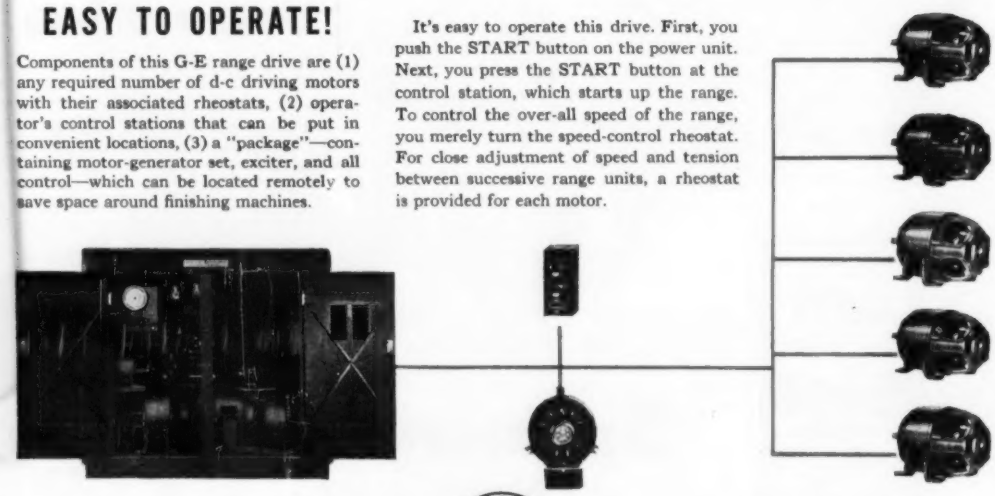
G-E motors driving this textile dryer and other finishing units are closely co-ordinated by dependable G-E packaged range-drive equipment.

Now—a Packaged

EASY TO OPERATE!

Components of this G-E range drive are (1) any required number of d-c driving motors with their associated rheostats, (2) operator's control stations that can be put in convenient locations, (3) a "package"—containing motor-generator set, exciter, and all control—which can be located remotely to save space around finishing machines.

It's easy to operate this drive. First, you push the START button on the power unit. Next, you press the START button at the control station, which starts up the range. To control the over-all speed of the range, you merely turn the speed-control rheostat. For close adjustment of speed and tension between successive range units, a rheostat is provided for each motor.



GENERAL ELECTRIC

654-16

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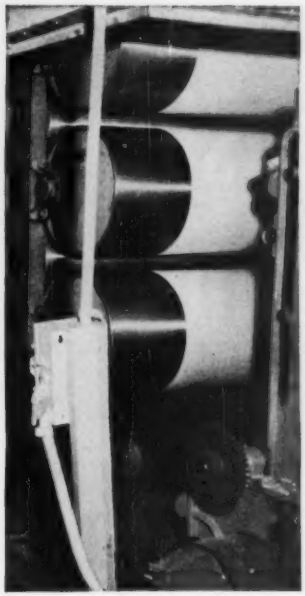
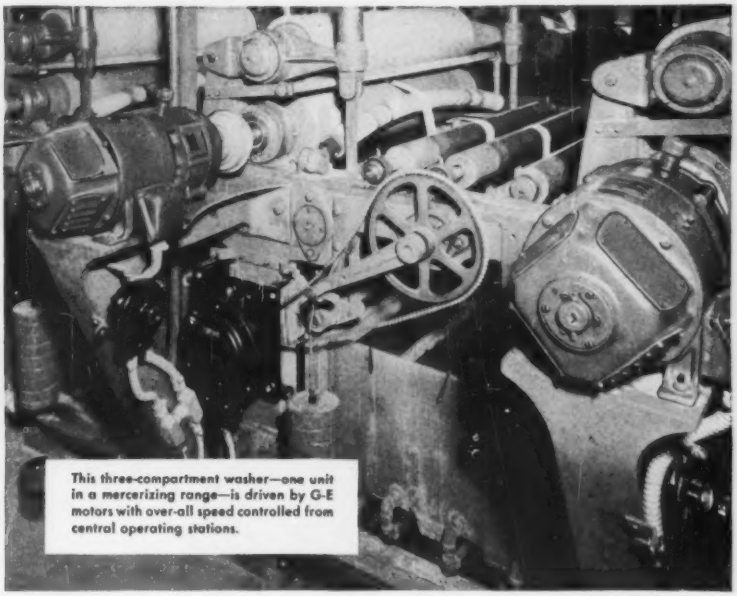




This three-compartment washer—one unit in a mercerizing range—is driven by G-E motors with over-all speed controlled from central operating stations.

G-E Range Drive

that lowers your installed cost —gives greater layout flexibility!

Range Drives FOR TEXTILE MILLS

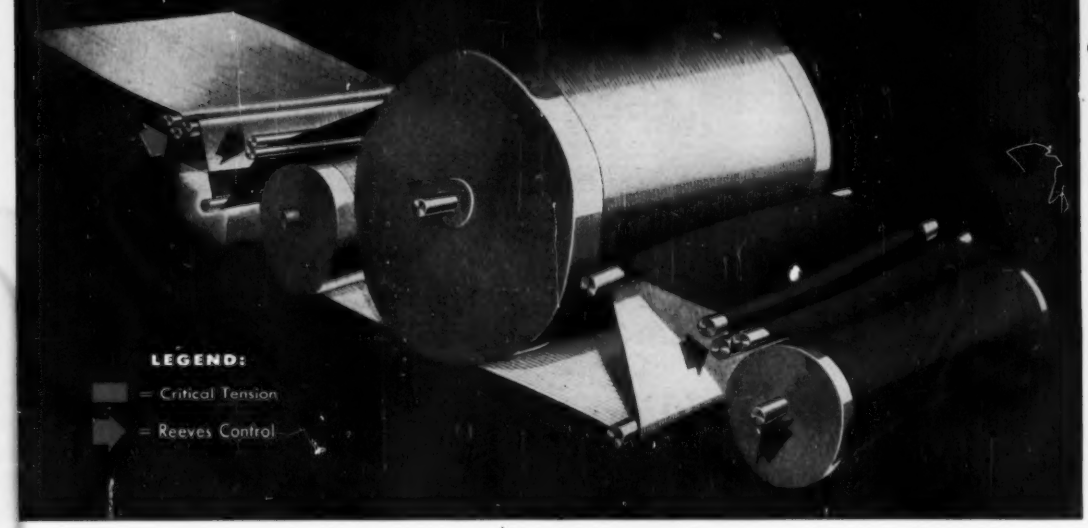
See "Textiles Unlimited," G-E's full-color sound movie on how textile mills are modernizing. Your G-E representative will gladly arrange a showing of this More Power to America presentation.

Here's a range drive that gives you all the advantages of the widely used adjustable-voltage d-c system of speed control—brought to you by General Electric in a mass-produced "package" of standardized parts. Now you get lower installed cost, simplified installation, and greater ease in making plant-layout changes in addition to these other important advantages:

- Any desired speed range and jogging speed.
- Easy control of over-all speed from a central location.
- Close co-ordination of speed of all motors by means of compensating gates or "soft" motors.
- Flexibility of operation because it permits individual units to be disconnected from the range.
- Dynamic braking for quick stopping, and regenerative braking for controlled deceleration, available if required.
- Maximum reliability and minimum maintenance with a simple, sturdy G-E motor at each drive unit.

If you're planning to install a complete new range, ask your machinery manufacturer about this G-E packaged multi-motor drive. If you're extending or modernizing an existing range, call in your local G-E textile-mill specialist on your drive problems. *Apparatus Dept., General Electric Co., Schenectady 5, N. Y.*

Control Critical Tension from Creel to Beam



The problem of tension control, *always* a big bugaboo in slasher operations, can now be positively and effectively controlled with the new REEVES "Servo-Control" Slasher Drive.

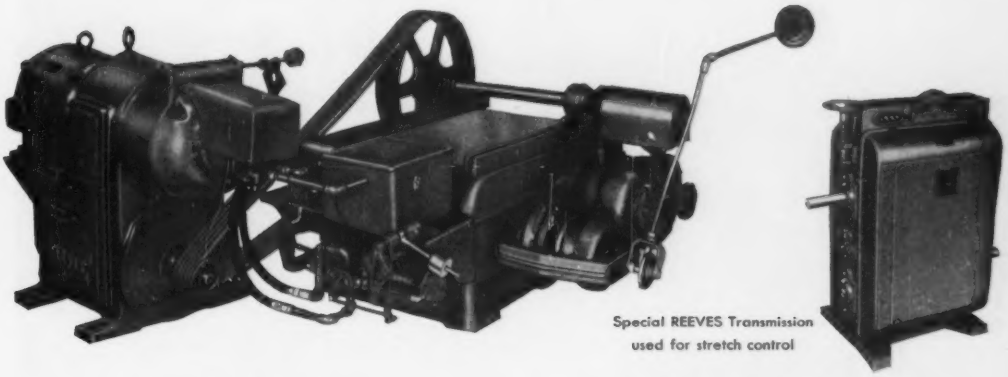
This completely integrated and completely synchronized REEVES Slasher Drive provides accurate and sensitive tension control at ALL critical points, from creel to beam! It operates with equal efficiency on all kinds of yarn—cottons, worsteds, blends and synthetics—despite variations in drying temperature, humidity, drying speeds, etc. It improves warp quality; increases loom output; and reduces production costs.

Assuring trouble-free service and accurate, sensitive control year after year, the REEVES Slasher Drive is the lowest of all drives in initial cost. It has no complicated electrical hookups and its variable speed mechanism is sturdily constructed,—tested and proved in more than a *quarter-million* REEVES installations of all types. Your own mill mechanics can easily install and maintain the entire unit.

The complete REEVES Slasher Drive consists of only one motor and three basic control units:

1. Main Drive . . . providing a 15:1 speed range to deliver desired "creep," "jog," and "run" speeds for all yarn sets. Readily adaptable to moisture control equipment.
2. Beam Drive . . . with new "Servo-Control." Automatically maintains uniform tension on yarn as it builds up on the beam.
3. Stretch Control . . . for accurate control of stretch between all desired points, from creel to delivery roll.

REEVES Main Drive (left) and "Servo-Control" Beam Drive



Special REEVES Transmission used for stretch control

with REEVES "Servo-Control" Slasher Drive

The Main Drive of the REEVES Slasher Drive is a single, compact REEVES Vari-Speed Motodrive, with a 15:1 speed range and running speeds as high as 100 yards per minute.

Acceleration and deceleration are accomplished smoothly and swiftly, without smashing the yarn, by the mere touch of a button. From "creep to run" and "run to creep," the yarn is under complete, automatic control at all times. The Main Drive always returns to the exact running speed being used at that time.

The Beam Drive consists of a standard REEVES Variable Speed Transmission and the "Servo-Control" system designed by REEVES to meet the sensitive requirements of an effective Beam Drive. It assures accurate, uniform tension control in building the beam, at a speed equal to the slasher's maximum drying capacity. As yarn builds up on the beam, the "Servo-Control" automatically decreases Transmission speed; this, in turn, reducing beam speed to the point necessary to maintain steady, uniform yarn tension and constant surface speed.

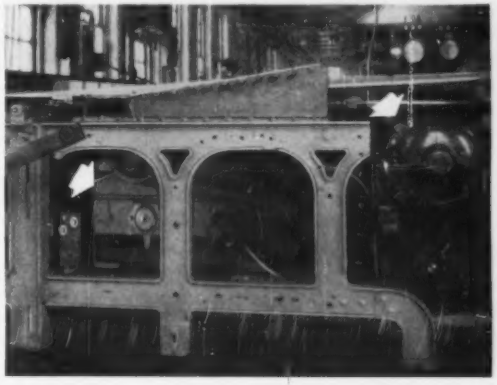
Stretch control is provided by one, or more, REEVES Transmissions. The first drives the squeeze rolls. A second Transmission may be used for optimum control—driving an auxiliary drag roll and installed between creel and size box. Control of the squeeze rolls assures delivery of wet yarn to the drying unit under minimum tension. The variable speed control between creel and size box puts the greatest tension on the dry yarn and leaves practically no tension on the wet yarn as it passes through the size box.

Make your slasher operations more productive and more profitable by installing the new REEVES "Servo-Control" Slasher Drive—now ready for immediate delivery. Write for free bulletin described below.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

Recognized Leader in the Specialized Field of Speed Control Engineering

Main Drive and Beam Drive fit neatly beneath the slasher head frame, occupying unused and otherwise wasted floor space.



accurate • variable **REEVES** *Speed Control*

NEW BULLETIN, JUST OFF THE PRESS

Write today for new, 8-page, bulletin illustrating and describing in detail the new REEVES "Servo-Control" Slasher Drive. Contains invaluable technical data for every textile mill engineer. Send for Bulletin No. W-45a-G-503.

USE THESE LABORATORIES TO IMPROVE YOUR TEXTILE PRODUCTS

AS we work with all sizing and finishing raw materials and chemicals, our technicians are familiar with the advantages and limitations of each type. This is a *"custom"* business. Our Laboratories therefore can function as a *department* of your company!

Look over the partial lists of operations and products on this page. Write us about *the improvements you want* in your sizing or finishing operations. We'll gladly lend you valuable aid in utilizing the advances of textile research in meeting today's production goals of, 1. High quality, 2. Low cost, 3. Improved output.

Paisley Scientific Textile Service

(LIQUID) TEXTILE OILS, SIZING and FINISHING SPECIALTIES

THREE STAR OIL
Soaking rayon preparatory to throwing crepe.

NOX-FOME No. 2
Defoamer for textile sizing. A concentrate containing no added water.

A.R.N. No. 3
One-piece warp size for synthetic yarns, yielding smooth hand and requiring no desizing.

A.R.N. No. 8
Warp size for yarn dyed fabrics. Added to Stymer sizing formula, it prevents "stickers" and increases weaving efficiency. Prevents "frost".

M.N.T. CONCENTRATE
Catalytic softener for slashing of cotton warps, reducing time of preparation with lower shedding at the loom. Also used for nylon sizing.

RESILEX NC-8
Resin softener-penetrant, film-forming with animal glue for warp sizing of synthetic yarns.

PENETRA-SET
For conditioning of all yarn fibres.

Morningstar — Established 1851

(DRY PRODUCTS)

COTTON WARP SIZING
Aroostocrat Potato Starch and Nestaco Potato Starch. Highest quality, uniformity, constant performance.

RAYON WARP SIZING
Reselvol, Styrezgum and Rezicose for every spun synthetic. Bone, Chrome and Hide Glues of uniform color and test.

PRINTING GUMS
Corn, Potato and Tapioca to meet specific requirements.

FINISHING
Dextrines and Thin Boiling Starches of every solubility or viscosity—from Corn, Potato or Tapioca.

THROWING
Synthogel Nos. 9 and 10 yield uniform pebble thru ease of removal in the boil-off.

CARPET & FELT SIZING
A wide range of Dextrines and Starches specially converted.

PAISLEY PRODUCTS INC.
DIVISION OF
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Manufacturers of Scientific Textile Oils-Sizing and Finishing Specialties-Dextrine and Starch Products

For perfect Teamwork

Follow-thru with ORANGE LINE LOOM LEATHERS

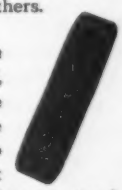
Here are three members of the big team *in action!* ... for this photograph was taken at 1/20,000th of a second while the loom was doing 175 picks per minute!

It's one picture in a series of amazing "stop action" photographs showing how G&K Textile Leathers *follow-thru* to prevent shuttle bounce, cut shuttle cost, stop kinky filling ... Here's proof that you can *follow-thru with leather* for better output, less down-time, bigger profits. Start with the *Big Three* in the famous G&K Orange Line:

First, *the famous PICKMASTER picker,* precision-built of special Hairitan® Leather – the only material that can withstand the repeated blows of the shuttle spur without causing shuttle bounce or getting over-heated. Shuttle bounce causes kinky filling, and over-heated spurs cause trouble.

Second, *the famous BOXMASTER Hairitan Leathers.* Again a special Hairitan Leather that maintains the original dense, high-friction surface as it wears. No coarse fibres to catch filament rayon – no rough surface spots to interfere with the smooth boxing of the shuttle. You can adjust your boxes and forget them when you cover with BOXMASTER Leathers.

Third, *the famous Hairitan Check Strap,* hair-on or hair-off, straight or endless types. These are built to *flex* and *flow* twice a second, month after month to cushion the picker stick without wearing on the edges. Only leather can stand up in this tough service – and G&K Check Straps of Hairitan Leather are proving that a good check strap is a Loom Fixer's delight!



Follow-thru with leather for better, more profitable loom hours. And look to Graton & Knight and its southern affiliate, Dixie Leather Corporation, for the best in TEXTILE LEATHERS.

100 YEARS OF SERVICE TO INDUSTRY

GRATON AND KNIGHT®

DIXIE

Textile Leathers

FAMOUS ORANGE® LINE TEXTILE LEATHER

GRATON & KNIGHT COMPANY, WORCESTER, MASS. • DIXIE LEATHER CORPORATION, ALBANY, GEORGIA *Affiliate*

EXTREME PRESSURE

All production machinery will last longer — give better service — if the proper lubricant is used. That's why you will find it profitable to use high quality Tycol oils and greases in your plant.

There's a reason! No matter what your lubricating need — *EXTREME PRESSURE, high or low temperature, high speed or any other service condition — there's a Tycol oil or grease suited to your specific requirements.

Refined from the highest grade crudes, Tycol lubricants are exceptionally resistant to breakdown which means greater economy . . . longer machine life for every type of equipment.

Tide Water Associated will gladly recommend the Tycol lubricant that meets your particular requirements. Call, write or wire your nearest Tide Water Associated office today.

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INDUSTRIAL LUBRICANTS

Boston • Charlotte, N. C. • Pittsburgh • Philadelphia • Chicago Detroit • Tulsa • Cleveland San Francisco • Toronto, Canada

TIDE WATER ASSOCIATED OIL COMPANY

17 BATTERY PLACE - NEW YORK 4, N. Y.

*LEARN WHAT THIS PRODUCT CHARACTERISTIC MEANS TO YOU — READ "LUBRICANIA" This informative handbook, "Tide Water Associated Lubricania," gives clear, concise descriptions of the basic tests used to determine important properties of oils and greases. For your free copy, write to Tide Water Associated Oil Company, 17 Battery Place, New York 4, N. Y.

REFINERS AND MARKETERS OF VEEDOL — THE WORLD'S MOST FAMOUS MOTOR OIL

Manufacturing says:
"WE NEED NEW TWISTERS THAT CAN PRODUCE LOW-TWIST SYNTHETIC YARNS OF TOP QUALITY AT LOWER COST."
Management says:
"PERHAPS SO! BUT YOU'VE GOT TO SHOW ME A MACHINE THAT WILL YIELD US AN ADEQUATE RETURN ON OUR INVESTMENT."

THE NEW "C6" TWISTER will satisfy BOTH requirements!

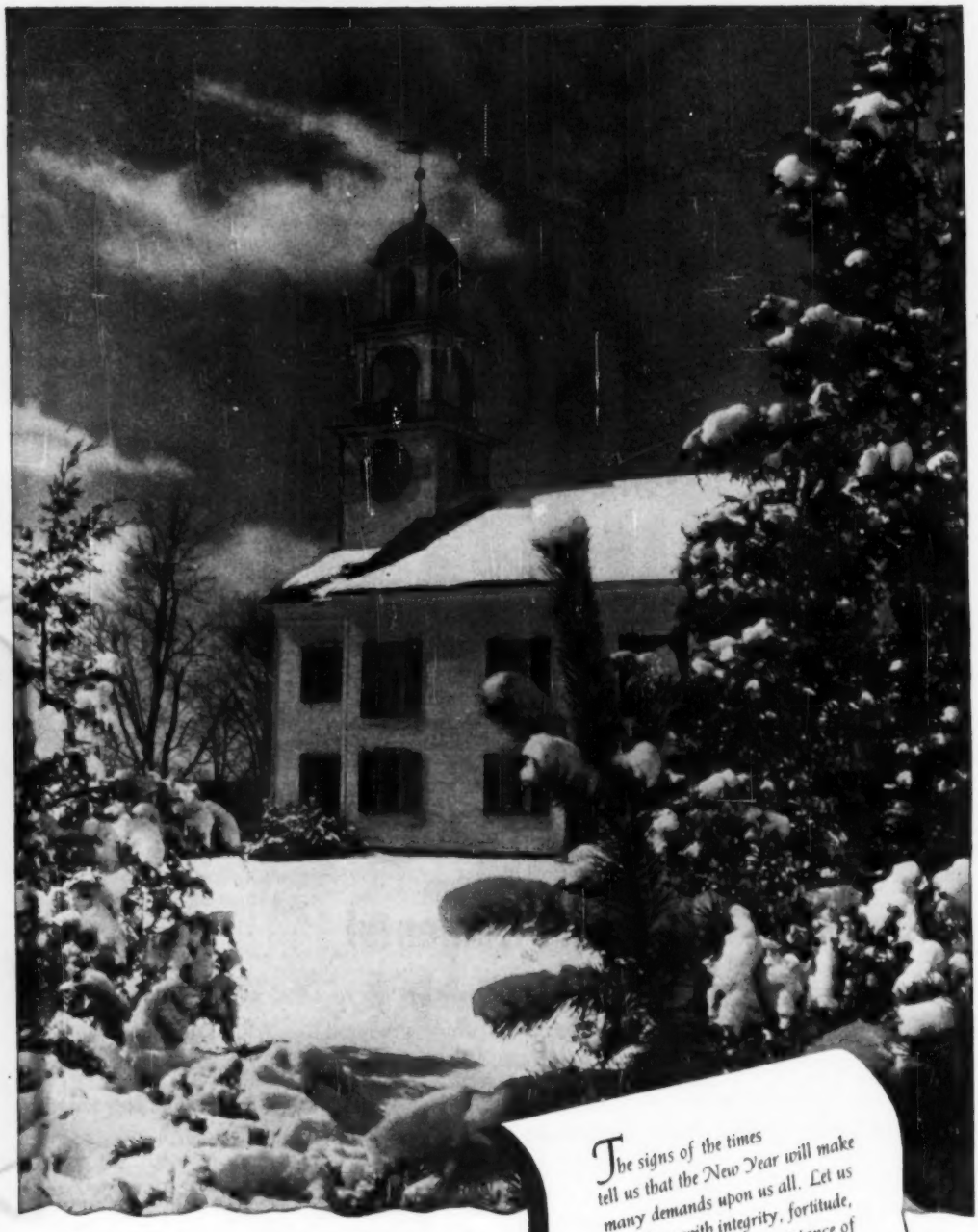
From both the production and financial viewpoints the new Whitin Model "C6" Twister is a sound investment for your mill. Performance tested by the yearly production of millions of pounds of synthetic yarn, it is designed to produce packages up to 4 lbs. with a wide selection of winds produced by Whitin patented builders. Simplicity of operation, plus ease in creeling of supply packages makes this machine popular with operators and management alike.

Write today for illustrated folder giving complete information about the model "C6" Twister and describing its many special features.

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.



The signs of the times tell us that the New Year will make many demands upon us all. Let us meet them with integrity, fortitude, and with a complete acceptance of our personal responsibilities.

HOWARD BROS. MFG. CO. WORCESTER 8, MASS.

Harry C. Bodey

President

For more information, write direct or use Reader Service post card.

YOUR BEST BUY-- NATIONAL ANILINE VATS

Better color—bigger sales!
Put action-packed sales appeal
in your new lines with
the distinctive color effects
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ESTABLISHED 1840

IS A SYMBOL OF THE HIGH EFFICIENCY OF GERMAN MAKERS OF TEXTILE MACHINERY IN THE FIELDS OF

SPINNING
WEAVING FINISHING

DECADES OF EXPERIENCE AND THE COOPERATION OF LEADING GERMAN MACHINE MAKERS ENABLE US TO PLAN AND ERECT COMPLETE TEXTILE PLANTS

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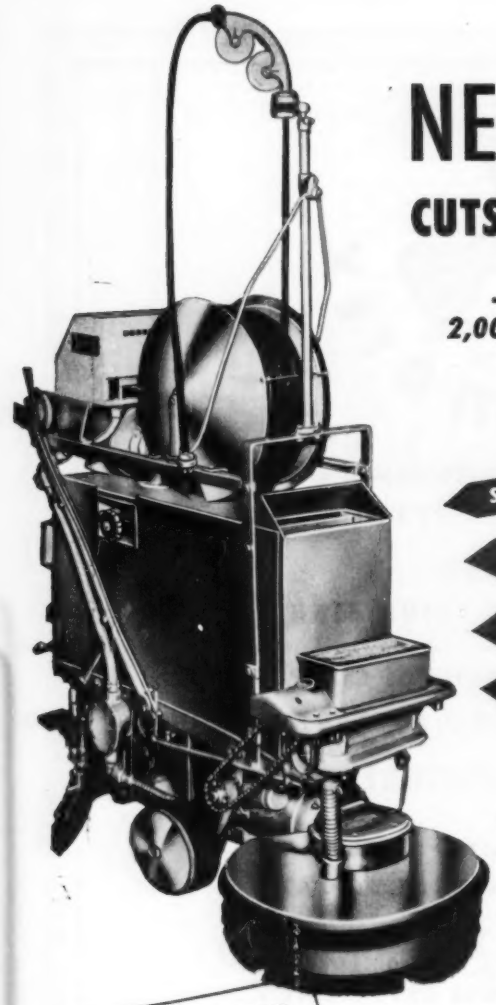
TEXTILMASCHINEN-UNION G.M.B.H.

FRANKFURT-MAIN

Friedrich Ebert-Str. 22 Germany Telephone 41512

NEW *SCRUBBER-VAC* CUTS CLEANING TIME 2/3

. . . for Small-Area Mills with 2,000 to 15,000 Sq. Ft. of Floor Space



Scrubs, Rinses, and Picks Up in ONE Operation

Designed to Permit Use in Narrow Aisles

Handles BOTH Wet and Dry Work

Can be Leased or Purchased

Now the labor-saving advantages of *combination-machine-scrubbing* are available to small as well as larger mills. With the *new 418P Finnell Scrubber-Vac*, small-area mills with 2,000 to 15,000 sq. ft. of floor space can clean their floors in *approximately one-third the time* required with a conventional 15 or 18-inch scrubber-polisher using separate equipment for picking up. A *Finnell Scrubber-Vac* speeds cleaning by handling four operations in one! It applies the cleanser, scrubs, rinses if required, and picks up (damp-dries the floor) — all in a single operation. And the machine is self-propelled—operator merely *guides* it.

Of narrow design, the *new 418P Scrubber-Vac* also meets the need in larger mills for a combination machine that can be used in congested areas, narrow aisles, and weave room alleys. Handles the dry work (steel-wooling, et cetera) as well as the scrubbing. And all the refinements of *Finnell's* larger combination machines are embodied in this smaller unit (18-inch brush ring). Has new type of water valve that *assures* uniform flow of water . . . powerful vacuum for efficient pickup (performs *quietly*) . . . a *Finnell-developed* trouble-free clutch . . . G. E. Motors and Timken Bearings.

FREE DEMONSTRATION ON YOUR OWN FLOORS!

See what you would save with a *Finnell Scrubber-Vac*. *Finnell* makes several models and sizes. Incidentally, it's good to know that when you choose *Finnell Equipment*, a *Finnell* man is readily available to help train your maintenance operators in its proper use.

For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 1901 East St., Elkhart, Ind. Branch Offices in all principal cities of the United States and Canada.

FINNELL SYSTEM, INC.

Pioneers and Specialists in

FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

For more information, write direct or use Reader Service post card.

INVESTIGATE

nylon travelers

PROVE TO YOURSELF
THESE IMPORTANT ADVANTAGES

1. Higher spindle speeds.
2. More yardage on your present bobbins.
3. Much less lubricant required.
4. Less end breakage.
5. Longer life. Less down time for changing travelers.
6. Cleaner frames—cleaner rooms.

1. LIGHT
2. STRONG
3. RESILIENT
4. SMOOTH
5. TOUGH
6. EXTREMELY RESISTANT TO WEAR

Many thousands of these Nylon Travelers are in daily use—giving complete satisfaction.

SEND FOR SAMPLES

MANUFACTURED BY
THE CLARK THREAD COMPANY, INC.
264 Ogden Street, Newark 4, New Jersey

SELLING AGENT
THE SPOOL COTTON CO.
264 Ogden Street
Newark 4, New Jersey

the ¢ FEW extra ¢ents that make a LOT of sense

When it comes to producing worsted yarn, there is always this important question: Should a spinner spend a few more cents than absolutely necessary when processing top, to try and achieve more efficient production and better finished products? In the case of Nopco* 1656-R, the answer is "yes".

Today; the price of top is the highest in history. Thus the few additional cents involved in the purchase of Nopco 1656-R become insignificant in the face of over-all costs. Moreover, the unique advantages afforded by this remarkable oil far outweigh its price differential when compared to alternatives. Just consider:

NOPCO* 1656-R...

1 ***provides excellent lubrication and eliminates static in worsted sliver. Result: no fly from top treated with this oil—fewer ends down in spinning and winding—much less brush waste;***

2 ***increases the drag, and thereby gives a better draft—resulting in more even and cleaner yarn;***

3 ***scours out with phenomenal ease—actually converting into suds when used with alkali, polyphosphate and water;***

4 ***applies equally to all production systems —American, Bradford or French—and is extremely advantageous on pin drafters.***

*Reg. U. S. Pat. Off.

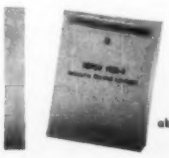
Yes, it will profit you to use Nopco 1656-R wherever you employ a lubricant in your top-processing procedure. And it will profit you to specify Nopco 1656-R, as a number of spinners already do, whenever you purchase oil-combed top. You'll pay a few more cents above "rock bottom" perhaps, but when you examine your finished yarns, you'll know you have produced high quality products with surprising economy.

NOPCO TRADEMARK EVOLVED THRU RESEARCH

NOPCO CHEMICAL COMPANY

HARRISON, NEW JERSEY

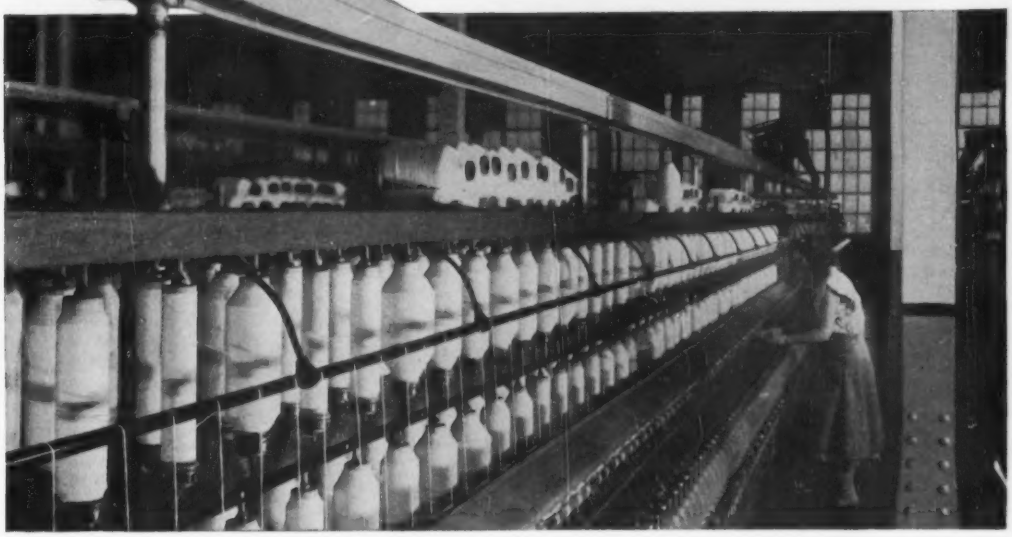
Branches: Boston, Chicago, Cedartown, Ga., Richmond, Calif.



Send for your FREE copy of this bulletin giving detailed information about Nopco* 1656-R

For more information, write direct or use Reader Service post card.

Hidden power costs in your spinning room from increased oil viscosity?



GULFSPIN maintains its original viscosity

even after extended service

—keeps power consumption low

Yes, oil viscosity has an important influence on power consumption of spinning frames! The higher the viscosity the more power consumed because of increased frictional drag.

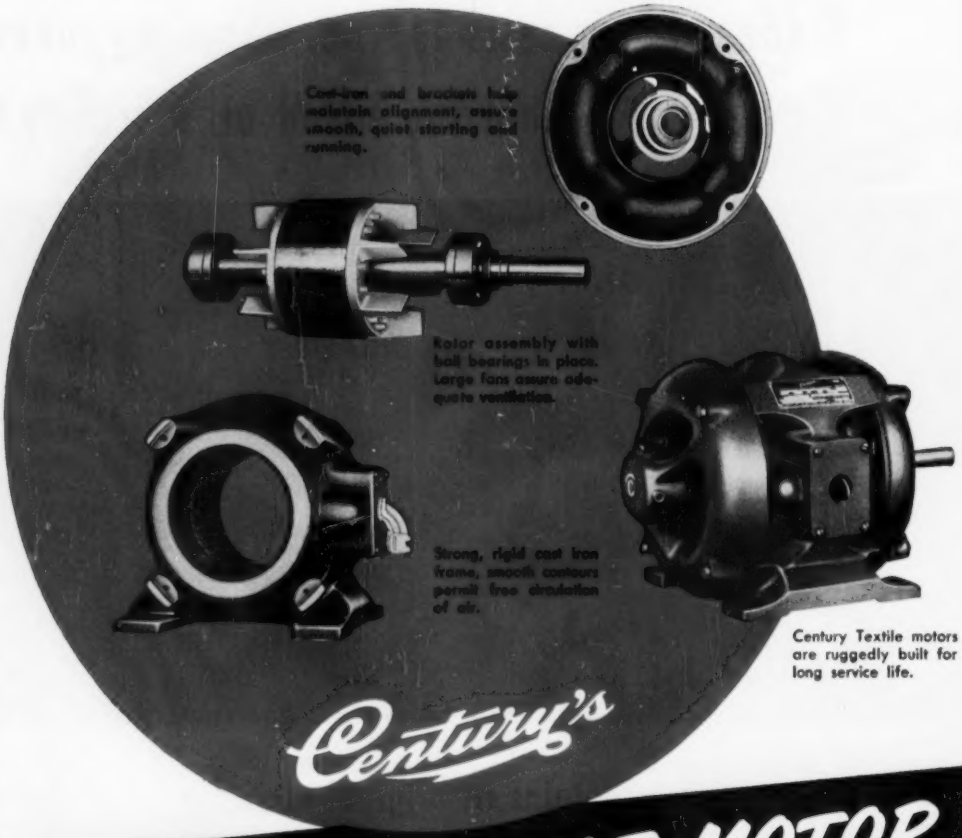
Dirt, lint, water, and oxygen act to thicken spindle oils so that after several month's service an 80 Second oil may have a viscosity of 90-100 SUV at 100°F. As a result power costs in the spinning room can be appreciably higher than normal. And this increased cost is generally hidden because few mills run periodic power checks on spinning frames.

That's one important reason why it pays to use Gulfspin. This outstanding new oil does not undergo any appreciable increase in viscosity even after extended service. Thus it is possible to make substantial savings in power costs.

Gulfspin has many other characteristics which make it effective for spindle lubrication; it is not only resistant to the formation of sludge, but also prevents sludge from depositing on spindle shafts and bolsters—thus keeps spindles clean; it reduces wear because of excellent oiliness characteristics; and helps effectively to protect spindle parts against rust.

See for yourself on your frames that this new spindle oil is better in every way. Write, wire, or phone your nearest Gulf office and ask a Gulf Lubrication Engineer to call. Gulf Oil Corporation · Gulf Refining Company, Gulf Building, Pittsburgh, Pennsylvania.

FIFTY YEARS OF SERVICE
1901 GULF 1951
PETROLEUM AND ITS PRODUCTS


Cast-iron end brackets help maintain alignment, assure smooth, quiet starting and running.
Rotor assembly with ball bearings in place. Large fans assure adequate ventilation.
Strong, rigid cast iron frame, smooth contours permit free circulation of air.
Century's

Century Textile motors are ruggedly built for long service life.

NEW TEXTILE MOTOR SHEDS LINT

-677

- STREAMLINE DESIGN
- COOLING AIR FLOW

Smooth clean air passages permit cooling air to enter the motor through the end brackets. This steady blast of air circulates near the bearings, around the windings and out through the adequate air passages in the frame.

Lint and textile dust pass through the motor readily, without clogging. This results in clean radiation surfaces, which means that the motor operates at normal temperature.

Century Ball Bearing Textile Motors are lubricated at the factory for the life of the lubricant — under normal service, this is several years without re-lubrication.

However, evaporation or oxidation due to high temperature determines the ultimate life of the lubricant. Century construction permits re-lubrication, when required, without dismantling.

In addition to textile motors, Century builds a complete line of electric motors in sizes from ⅛ to 400 horsepower. They are available in open rated drip proof, splash proof, enclosed fan cooled and explosion proof frames to meet any atmospheric hazard.

For complete information, including dimensions and prices, write today.

Century C MOTORS

CENTURY ELECTRIC COMPANY

1806 PINE STREET, ST. LOUIS 3, MISSOURI • OFFICES AND STOCK POINTS IN PRINCIPAL CITIES

CERFAK
Highly effective series of detergents having excellent wetting powers—for wet processing of all fabrics.
SYNTHETIC DETERGENT
SURFAX
Surface-active chemicals with excellent wetting out and re-wetting ability—dye bath leveler and penetrant.
WETTING AGENT
HOUGHTO-SIZE
One-piece sizing agent that produces a smoother, easier-weaving warp—increases weaveroom efficiency.
WARP SIZING COMPOUND
HOUGHTO-WAX
A wax product that produces a smooth sleek surface for easier weaving—adds extra strength and flexibility to warp.
SIZING COMPOUND ADDITIVE
Developed by
HOUGHTON
for Textile Processing
in 99 out of 100 Mills
Complete information on these Houghton products for the textile industry will be sent to you promptly. Write to E. F. HOUGHTON & CO., PHILADELPHIA 33, PA.
products of
E. F. HOUGHTON & CO.
PHILADELPHIA · CHICAGO · DETROIT · SAN FRANCISCO
Ready to give you on-the-job service . . .
RAYLUBRIC
Series of oils for softening, soaking and throwing filament rayon and acetate fibers and yarns.
RAYON OIL
SULFOL
Moisture-free soluble oil for all wool and worsted applications; high in anti-static properties; non-oxidizing.
WOOL STOCK LUBRICANT
RESONET
Durable, easy-to-apply synthetic resin finish that brightens colors and improves hand of fabric—reduces lint.
SYNTHETIC RESIN FINISH
SOL LUSTRE
Soluble oil for softening and conditioning all types of textile fabrics and yarns—adds brilliance to dyed goods.
FABRIC AND YARN SOFTENER

You saw them at Atlantic City...

The New
MODEL "L" CARD
with
SYNCHRONOUS DRIVE
for
WOOL and SYNTHETIC FIBRES

The New
SIMPLEX MODEL "F"
WOOLEN SPINNING FRAME
with
FLUID DRIVE
and
ANTI-FRICTION SPINDLES

The New
ELECTRO-PNEUMATIC WARP SPOOLER
with
MAGAZINE CREEL
for
HIGH PRODUCTION—LOW COST WARP SPOOLING

The New
CONCEPT IN CARDING THEORY
Based on a new type of card clothing and a plan for its use.

We were pleased to have so many visitors at the American Textile Machinery Exhibition. We believe that you enjoyed the show and that you gained a lot of valuable ideas for your mill.

We urge you to put your ideas to work without delay.

Don't hide them away in a dark corner of your mind with a vague promise to do something about it someday.

Do it now! Turn your ideas to profit!

We tried to answer all of your questions at Atlantic City but in the rush, perhaps, you didn't complete the information that you wanted. Or perhaps a new idea has occurred to you.

In any case, write to us today, so that we can fill in the details that you need.

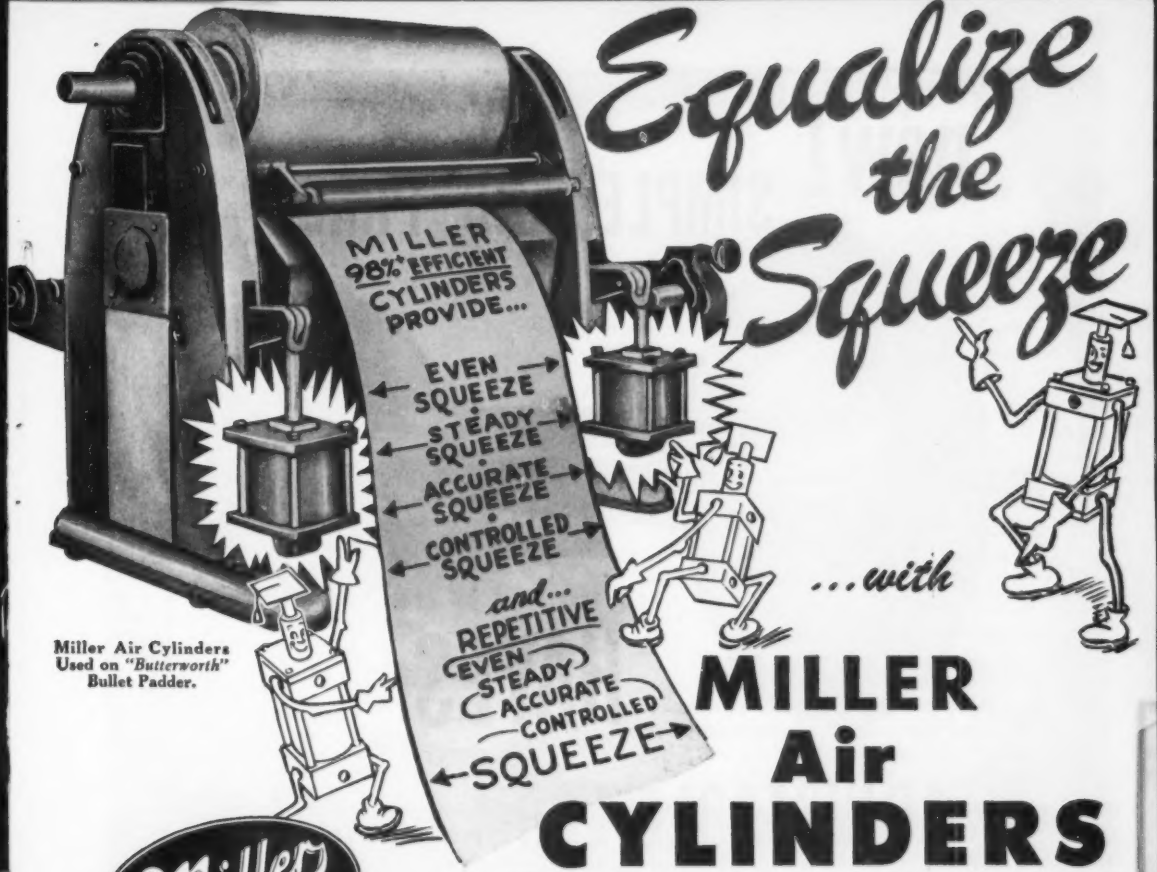
Address your letter direct to our company and it will be routed to the person best qualified to answer your questions. In this way you will be sure of a prompt reply by personal letter and any literature we have dealing with the subject.

Do it now !!

since 1832

NORTH ANDOVER, MASS.
CHARLOTTE, N. C.
U. S. A.

Equalize the Squeeze



Miller Air Cylinders Used on *"Butterworth"* Bullet Padder.

...with

MILLER Air CYLINDERS

Miller Air Cylinders economically provide the steady, even, repetitive "squeeze" so essential for the pressure rolls of textile machinery and equipment.

Precision-accurate adjustment and repetitive application of pressure to always the exact degree desired are assured by the high-efficiency, leakproof operation of these cylinders and the extremely low "break-away" pressures required to obtain smooth piston movement. Even when the operating plant air pressure is again applied after days of machine inactivity, piston movement is instantaneous—smooth- -chatter-free . . . because the Miller *self-regulating, wear-compensating* piston and rod seals *will not "freeze"* to prevent piston movement or to cause jumpy, jerky action. These seals never need adjustment, have no provision for adjustment, therefore *cannot be over-adjusted.* The Miller rod seal operates against the Miller scratch-resistant, rustproof hard chrome plated piston rod; the Miller piston seal operates against the precision-honed, highly polished finish of the Miller rustproof hard brass cylinder barrel. No wonder these seals still give leakproof, efficient service after millions of strokes. No wonder Miller Air Cylinders are completely free from the rust conditions common to ordinary cylinders.

In addition, *dirt wipers* at rod ends keep out all dirt and lint, and *solid steel* heads, caps, and mountings eliminate costly, dangerous breakage.

Miller

AIR CYLINDERS for
- Bullet Padders
- Washers
- Steamers
- Rope Squeezers
- Blanching Equipment
- Dyeing Equipment
- Other Textile Machinery

Write for illustrated cylinder bulletins A-105 and H-104

COMPLETE MILLER CYLINDER LINE INCLUDES: AIR CYLINDERS, 1½" to 20" BORES, 200 PSI OPERATION; LOW PRESSURE HYDRAULIC CYLINDERS, 1½" TO 6" BORES FOR 500 PSI OPERATION, 8" TO 14" BORES FOR 250 PSI; HIGH PRESSURE HYDRAULIC CYLINDERS, 1½" TO 12" BORES, 2000-3000 PSI OPERATION. ALL MOUNTING STYLES AVAILABLE.

Miller

MILLER MOTOR COMPANY

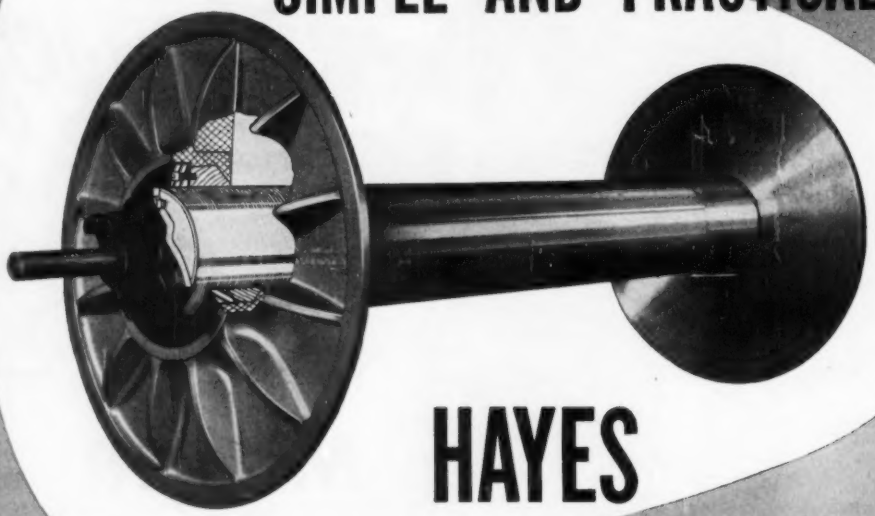
4025-35 N. KEDZIE AVENUE — CHICAGO 18, ILLINOIS

AIR AND HYDRAULIC CYLINDERS · ACCUMULATORS · COUNTERBALANCE CYLINDERS · BOOSTERS · AIR MOUNTS

CLEVELAND — PITTSBURGH — PHILADELPHIA — DETROIT — YOUNGSTOWN — BOSTON — HARTFORD — NEW YORK CITY — DAYTON — ST. PAUL — FORT WAYNE — INDIANAPOLIS — MILWAUKEE — NASHVILLE — SEATTLE — LOS ANGELES — SAN FRANCISCO — BALTIMORE — ST. LOUIS and OTHER AREAS.

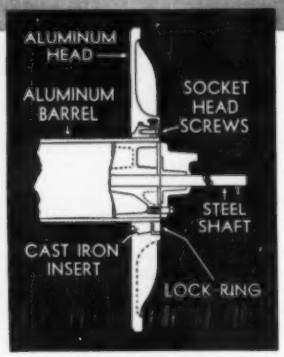
Sales and Service from coast to coast

new! SIMPLE AND PRACTICAL!



HAYES

ADJUSTABLE LOOM BEAMS



Sectional drawing of New Locking Device — simple — strong — stays put.

NOW, for the first time you can have the most practical, Adjustable Loom Beam yet devised. It is simple, easy to adjust and locks in any position. To secure the head in place, you simply tighten the socket head screws evenly on the locking mechanism. No special tools are required. The new and very simple built-in locking device shown at the left gives you greater head strength, *with no reduction in yarn space.* Here is a New, Adjustable Loom Beam that is strong and sturdy in construction, is accurately made and stays true indefinitely, and of course does not rust. *Yet it is so light in weight that two men can lift it into the slasher with ease!*

NOW, you can have the benefit of years of research, now you can have all the advantages of the conventional adjustable loom beam plus light weight, strength and accuracy never before achieved. Hayes produces Adjustable Loom Beams for all standard looms. Write for Catalog 100, on Hayes Beams. Due to present material curtailments, we may not be able to ship your Beams as quickly as you or we would like. We will however, do our best to fulfill your requirements.

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INDUSTRIES, INC.,
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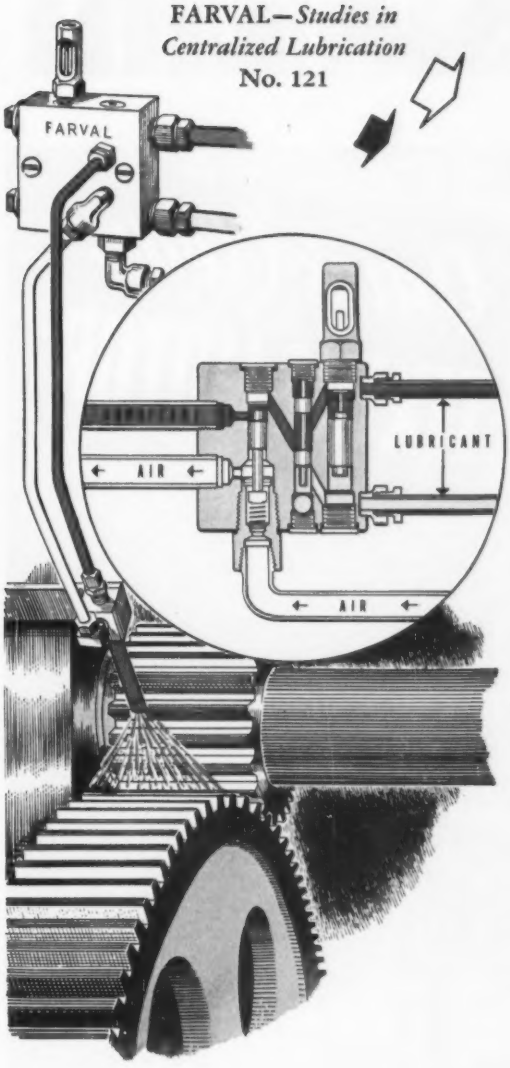
THE WORLD'S LARGEST PRODUCER OF LIGHT METAL BEAMS

New Farval Spray Valve

meters lubricants to slide surfaces and open gearing

FARVAL—*Studies in Centralized Lubrication* No. 121



CONTROLLED spraying of lubricant on open gearing, slide surfaces, etc., is practical with the new Farval Spray Valve.

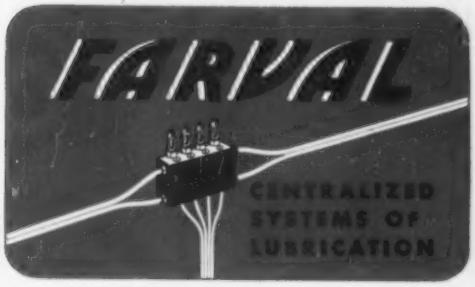
By an ingenious adaptation of the familiar Farval Dualine Valve, either grease or oil is sprayed through a nozzle—on any desired area, in any desired amount, and at any desired interval. The new spray valve can be added at any point in a regular Farval Dualine System where compressed air is available—or a complete system may consist entirely of spray valves, served by either manual or automatic pumping unit.

Compressed air from the supply line is directed through the spray valve, which meters air to the delivery nozzle just as lubricant is metered. By a unique arrangement, the lubricant valve also turns on and shuts off the air. Thus the quantity of air used is limited to the amount needed to spray each delivery of oil or grease, without exhausting or reducing pressure. Positive cut-off of lubricant by the Farval valve after each delivery eliminates bleeding from the nozzle—no waste, no mess, no trouble.

The Farval Spray Valve has been thoroughly tested in service and is now in use on a wide variety of machines and equipment. It has demonstrated its ability to supply lubricant efficiently and economically to open gearing, slide surfaces, in fact, wherever a standard Farval Dualine closed system is not readily adaptable.

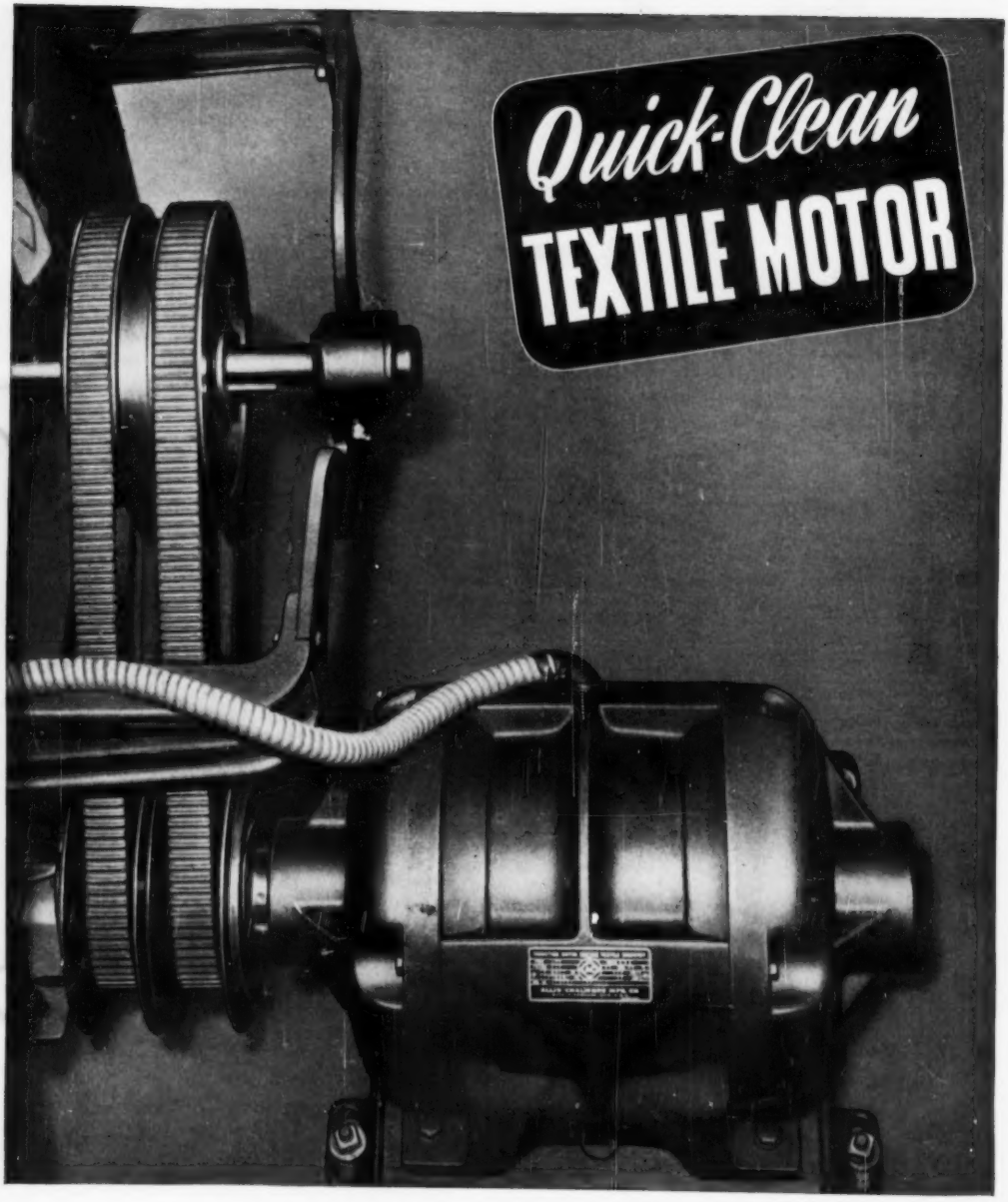
Write for a copy of Farval Spray Valve Bulletin No. 60 for a full description, with illustrative diagrams and installation data. The Farval Corporation, 3268 East 80th Street, Cleveland 4, Ohio.

Affiliate of The Cleveland Worm & Gear Company, Industrial Worm Gearing. In Canada: Peacock Brothers Limited.



 For more information, write direct or use Reader Service post card.

NO Lint



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Troubles Here

QUICK-CLEAN wide open design sweeps lint and dirt in . . . out . . . and away. None can stay in the motor to cause costly trouble.

YOU JUST DON'T HAVE MOTOR TROUBLES due to lint and dirt laden atmospheres when you use *Quick-Clean* motors. Powerful fans sweep cooling air in and out again through large air passages. Interior surfaces are smooth, hard and contoured to aid air flow. There is no place where lint and dirt can collect.

Cast Iron Frame

The frame of the *Quick-Clean* motor is rigid cast iron which inherently resists the corrosive action of moist mill atmospheres. Cast iron insures never-changing alignment under all normal operating conditions.

Factory Lubricated Bearings

Bearings are lubricated at the factory and operate without attention or cost for years. Grease or oil cannot leak from the bearings to soil materials or collect dirt. Lint and dirt cannot enter the bearing.

Get the Facts

Your nearest Allis-Chalmers Authorized Dealer or Sales Office has complete information on the *Quick-Clean* motor. Or write Allis-Chalmers, Milwaukee 1, Wisconsin for the bulletins shown below.

Match Quick-Clean Motors with A-C Starters

Developed for dependable, safe starting of *Quick-Clean* motors. Other controls for all electrical equipment in your plant. For competent application engineering, see your Allis-Chalmers Authorized Dealer or Sales Office.

A-3232

Quick-Clean, Texrope and *Vari-Pitch* are Allis-Chalmers trademarks.

Send for Free Engineering Literature

Quick-Clean Motors	51B6055	Power Generating Equipment, Transformers, Circuit Breakers, Power Distribution Equipment	25B6150
Allis-Chalmers Loom Motors	51B7111		
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COMPLETE SERVICE from power line to machine

Transformers

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Motors

Texrope Drives

ALLIS-CHALMERS

Originator of the Multiple V-Belt Drive for the Textile Industry

THERE IS extra value IN EVERY CONE OF CROSS COTTON KNITTING YARN

It's there because we put it there! First, we start with the best raw cotton . . . Strict Middling. Next, we process the cotton . . . from spinning to dyeing . . . by exclusive CROSS methods under the most perfect conditions to insure absolute uniformity in quality and sterilized cleanliness.

No wonder more and more knitters and producers are demanding more and more CROSS Double-Carded and Combed Cotton Knitting Yarns. They want that extra value that CROSS puts into every cone of yarn.

CROSS COTTON MILLS COMPANY

CROSS COTTON MILLS CO. MARION, N.C. KNITTING YARN

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DOUBLE CARDED AND COMBED COTTON KNITTING YARNS **SINGLE AND PLY - BLEACHED OR DYED**

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NYTRON

offers A DIFFERENT COMBINATION OF PROPERTIES

FOR TEXTILE PROCESSING

NYTRON, Solvay's new, low-cost wetting agent-detergent, offers a new combination of properties to the textile processing industry . . . a combination available in no other synthetic organic detergent. Add NYTRON to soaps, acids and alkalies . . . try it for soaping-off, dye leveling, scouring and all other wet processes where wetting, penetration, detergency and rinsability are important factors.

NO OTHER SYNTHETIC ORGANIC DETERGENT CAN MATCH NYTRON'S EXCLUSIVE COMBINATION OF PROPERTIES

EXCEPTIONAL DETERGENCY—In cold or hot water . . . retains its detergent action when used in either acid or alkaline mediums

EXCELLENT WETTING—reduces wetting time from hours required in plain water to a matter of seconds

QUICK, THOROUGH RINSING—even in cold water; does not leave an insoluble deposit

COUNTERACTS HARD WATER DIFFICULTIES—will not form hard water curd; more economical because increased quantities do not have to be added to compensate for water hardness

REMAINS CHEMICALLY STABLE—under widely varying conditions of temperature, acidity or alkalinity

EXCELLENT EMULSIFYING POWER—removes oil and greases from fabrics and surfaces

HIGH AND RAPID SOLUBILITY—goes into solution almost instantly even in cold water; will not "salt out" in concentrated solutions of many acids, alkalies or metallic salts

REDUCES SURFACE TENSION—addition of only 3½ ounces to 100 gallons of water will reduce surface tension by more than 50%; this action is actually enhanced under hard water conditions

Use NYTRON for Wools, Nylons, Rayons, Cottons

- **scouring prior to yarn and cloth dyeing**
- **rope soaping of dyed cloth**
- **a penetrating and leveling agent in *dyeing operations***
- **carbonizing of wool (wetting and penetrating)**
- **scouring woolen, rayon and nylon piece goods**
- ***many other operations***

A SOLVAY PRODUCT

Samples of NYTRON are available on request. Mail this coupon now for your free sample—no obligation.

SOLVAY SALES DIVISION, Allied Chemical & Dye Corporation
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I want to see for myself how NYTRON—the new type of synthetic organic detergent with the exclusive combination of properties—can improve my textile operations. Please send me a free sample.

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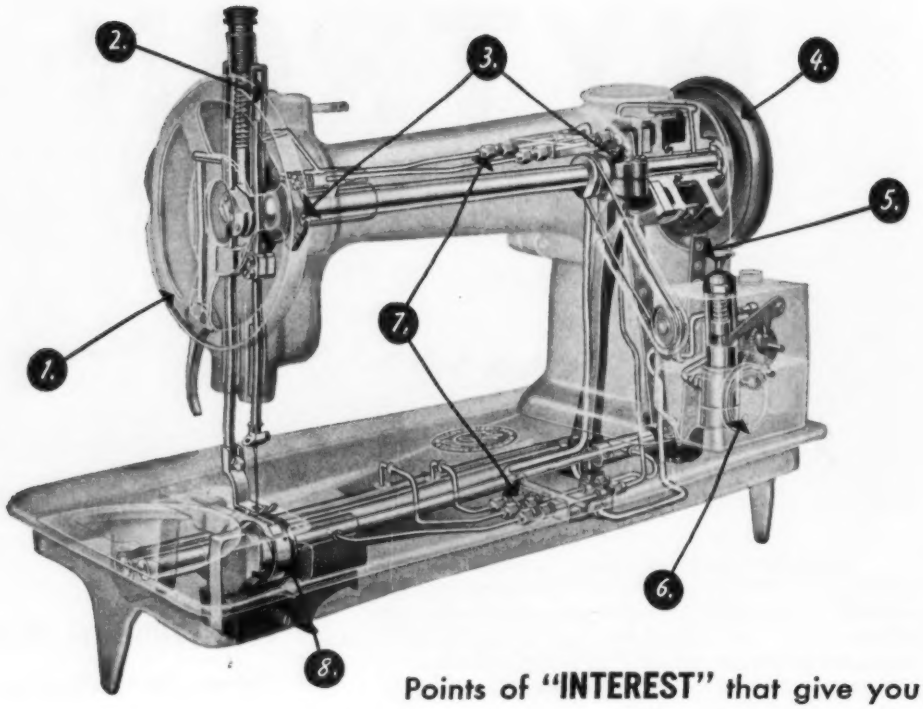
SW-1



Points of "INTEREST" that give you

A HIGHER RETURN ON YOUR INVESTMENT

in a "W&G" Type 10-A Lockstitch Machine

1. **Rotary Thread Take-up,** with instant adjustment for light, medium, or heavy thread. Saves operator's time — contributes to increased output.

2. **Air Cushioned Needle Bar** — assures smoother, quieter, high-speed operation with increased life of needle-bar bearings.

3. **Replaceable Bearings** for all shafts and bars — eliminate need for oversize parts and save time and expense of maintenance.

4. **Safety Hand Wheel** with improved web construction and deep belt groove that prevents accidental contact with belt hook.

5. **Heavy-Duty Belt Drive,** designed for extra long life at sustained high speeds. Eliminates back-lash common to gear drives.

6. **Fully Automatic Lubrication,** with belt-driven, force feed oil pump. Eliminates all manual oiling, saves operator's time, and increases machine life many fold.

7. **Metered Oil Flow** supplies the right amount of filtered oil to each bearing, according to its speed and load. Permits continuous operation at highest speeds without overheating.

8. **Floating Bobbin Case** *requires no lubrication* — prevents danger of oily threads and spoiled garments.

YES, in *every way*, this "W&G" Lockstitch Machine is designed and built to give many extra years of trouble-free service — to help you get increased production at minimum overall cost. For complete information, write for your free copy of Bulletin 886.

WILLCOX & GIBBS
Sewing Machine Co.

214 West 39th St., New York 18, N.Y.

Driving of the last spike in the first transcontinental railway has linked the East more closely to the growing West.

THE ISELIN DIARY, 1869

THE BETTMANN ARCHIVE

The ties that bind...

Across a million railroad ties, East joined hands with West, and a new era of economic unity and growth began. Growing pains were felt in every business. Many manufacturers turned to Iselin for counsel and aid in developing financial programs to meet expansion needs . . . Today, as for more than 140 years, Iselin's Factoring service aids healthy business growth, speeding capital turnover, eliminating credit risks . . . Our service, vital to the expansion of many successful businesses, can help you. Send for booklet on our Factoring service to industry.

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FOUNDED IN 1808

More efficient weaving

from Taylor-Controlled Rayon or Cotton Slashers

TAYLOR-CONTROLLED SLASHERS built by the Cocker Machine and Foundry Company have earned a reputation for top performance throughout the textile industry. One example is this installation (below) at Laurens Mills, Laurens, S. C. Laurens reports:

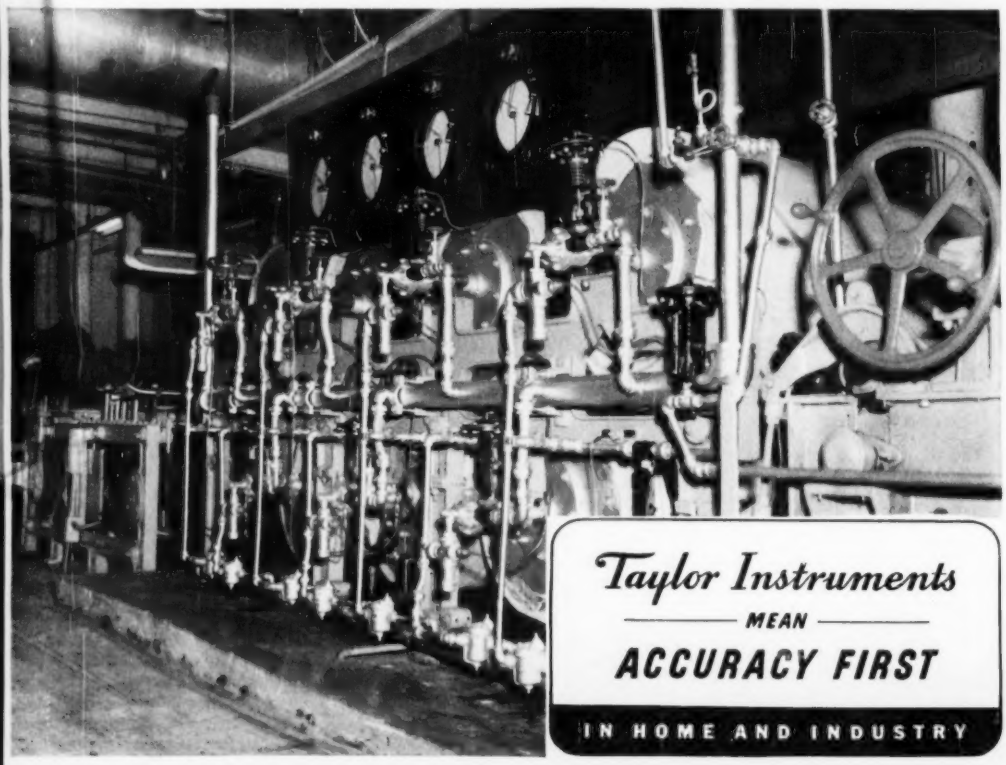
1. Control of condensate gives closest possible relationship with skin (face-of-slasher-cylinder) temperature.

2. Quick, automatic heat-up (at least 50% faster). No more time lost waiting for traps to empty.

3. Taylor system of air injection gives accurate control *regardless of operating temperature.*

NOTE: Whether your high-speed slasher is 5, 7, 9 or 11-cylinder, rayon or cotton, Taylor can equip it with automatic individual or group control.

We're especially proud to say that textile equipment manufacturers are using Taylor Automatic Control on both high and low speed slashers. Naturally, we furnish automatic control for every slashing phase: *size cooking, storage kettles temperature control, size box level and temperature control,* and *slasher cylinder temperature and pressure control.* Ask your Taylor Field Engineer, or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada. *Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.*

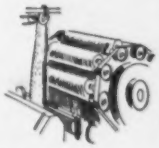


Taylor Instruments
MEAN
ACCURACY FIRST
IN HOME AND INDUSTRY

Jersey by Lebanon

Fiber Lubrication by

SWIFT'S 70S WOOL OIL



LEBANON WOOLENS— from the famous Lebanon Knitting Mills are known throughout the fashion world for their distinctive beauty, luxurious hand, and workability. Wool fibers for the worsted jersey pictured here were lubricated with a Swift & Company Wool Oil—70S.

The Lebanon Knitting Mills in Pawtucket, R. I., use Swift's 70S because they believe it produces a loftier yarn than conventional wool oils. They like 70S, too, for its extreme economy in their mill operation.

Swift's 70S is a blend of high-grade sulfonated animal oil and a highly refined mineral oil which is produced specifically for use in wool lubricants. 70S is specially treated to reduce oxidation. Emulsions of 70S tend to spread the lubricant evenly throughout the woolen fibers and in a form which facilitates subsequent scouring.

Find out today how you can get more efficient, more economical fiber lubrication in your mill operation. Just clip the coupon below for a trial drum of Swift's 70S at quantity price.

A phone call or postal card will bring full information about any of the fine Swift Wool Oils.

WOOL OILS by SWIFT

"Featuring a dress by a young designer, Chee Armstrong."

Swift & Company

Industrial Oil Department, Hammond, Indiana

Please send me your 55-gallon drum introductory trial shipment of Swift's Wool Oil 70S at the quantity price, to be tested for use in our operations. We understand if not fully satisfactory, it may be returned for credit at your expense. TW-1-51

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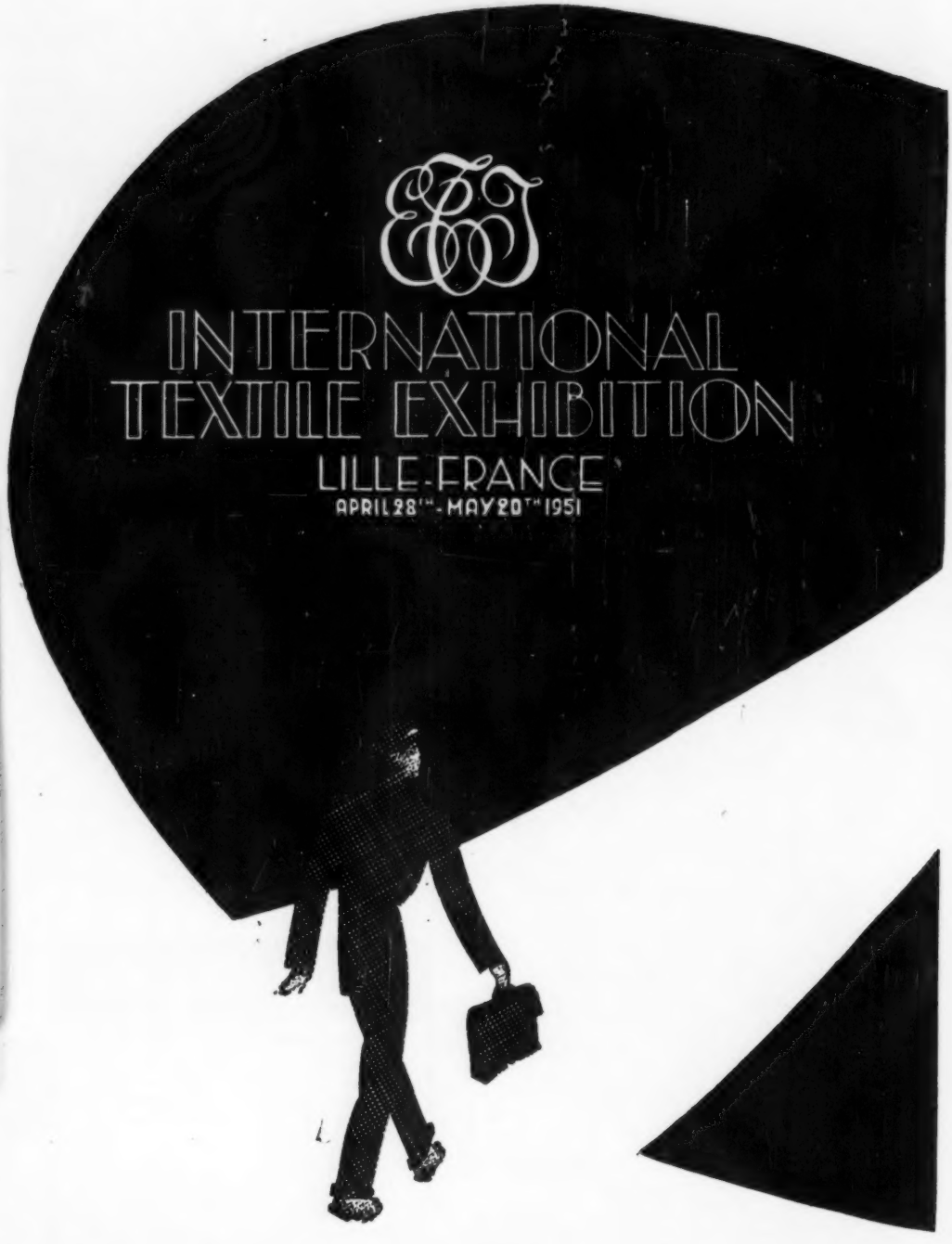

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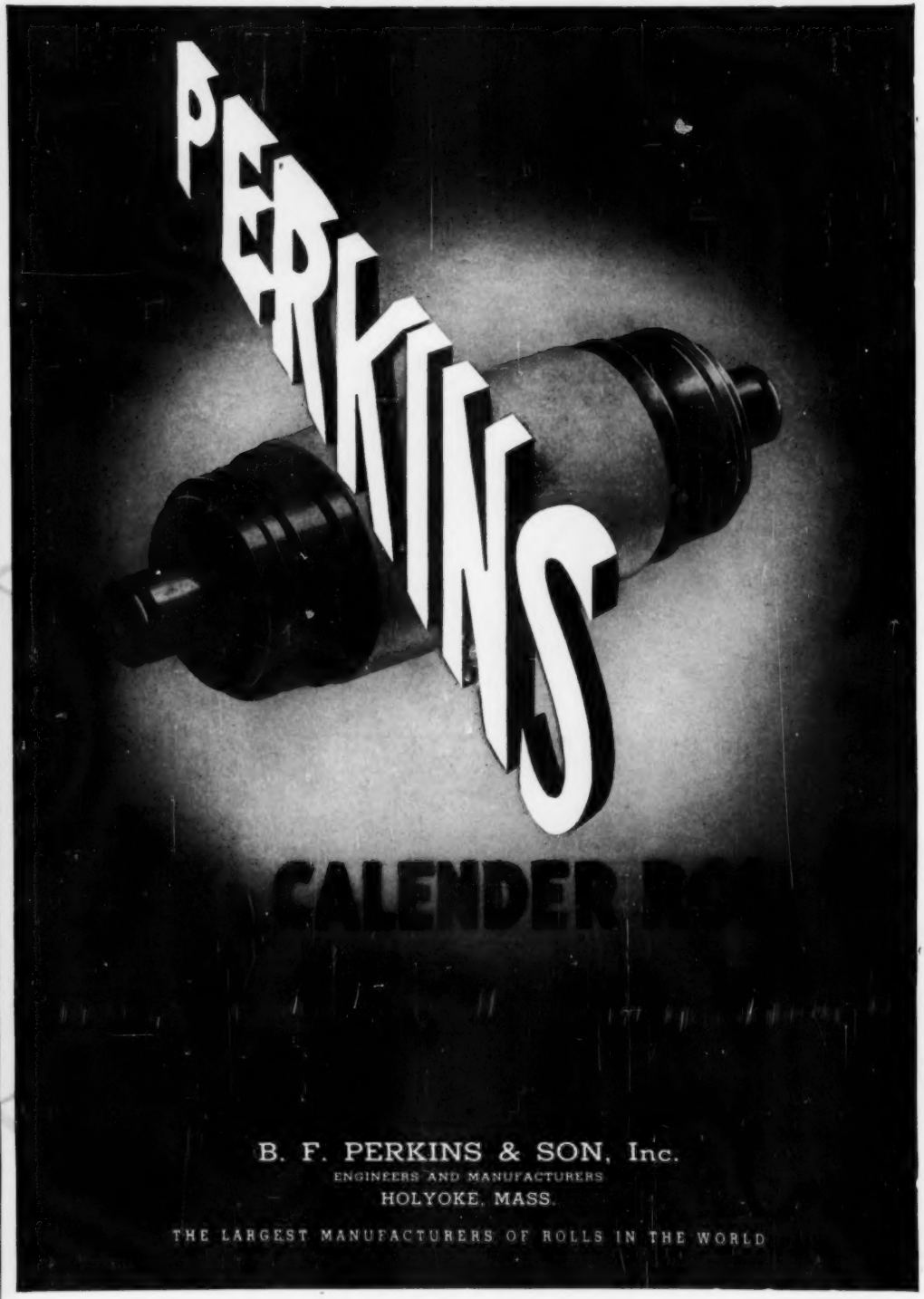
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THE LARGEST MANUFACTURERS OF ROLLS IN THE WORLD

SMOOTH running

Condor V-BELTS

"Smoothest running V-Belts we've ever had," users say. "... and they smooth out our production problems, too!"

Smooth running is no accident in Condor Whipcord V-Belts. For example, we micro-position the pulling section so that it stays in the neutral axis area, where engineering practice says it should be. With every belt so precision-made, a Condor Multiple V-Belt drive is bound to be a smooth running team.

Bulletin 6868 D, mailed on request, describes all advantages to you of Condor Whipcord V-Belts.

You'll find this same good engineering also in our hose, flat belting and conveyor belts. Just phone your R/M Distributor.

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RAYBESTOS-MANHATTAN, INC.

Manufacturers of Mechanical Rubber Products • Rubber Covered Equipment • Radiator Hose • Fan Belts • Brake Linings • Brake Blocks • Clutch Facings • Packings • Asbestos Textiles • Powdered Metal Products • Abrasive & Diamond Wheels • Bowling Balls

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SUN PRODUCTS OFFER YOU "JOB PROVED" PERFORMANCE

Sun's wide selection of "Job Proved" petroleum products, plus the vast experience of Sun Engineers, can help you cut costs, step up production, and improve quality. Every Sun product, after its development in the laboratory, must pass rigid and exhaustive tests in actual use. When the worth of the product has been completely demonstrated in this way, then—and then only—it is given the "Job Proved" stamp and offered for sale. Detailed product information and the help of Sun Engineers are yours for the asking. Call your local Sun Office.

SUN OIL COMPANY
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INDUSTRIAL OILS

Original charge of Sunvis as good as new after three years' use in hydraulic press.

SUNVIS 900 OILS—Unexcelled for turbine lubrication, for use as a hydraulic medium, for circulating systems and similar applications requiring longest possible oil life, plus maximum protection to equipment. Sunvis 900 Oils have a high viscosity index and uniform 0°F. pour point, and are fortified against corrosion and oxidation.

SUNVIS OILS—Give long, trouble-free service in all types of industrial reservoirs and circulating systems operating at normal temperatures. Sunvis Oils have uniform high viscosity index, low pour point, and low carbon content.

SUNVIS H.D. 700 OILS—For internal combustion engines operating under heavy-duty conditions, or where hydraulic valve-lifters are used; for circulating systems and other industrial applications where contamination is a factor. The additives in Sunvis H.D. 700 Oils supply detergency, and minimize oxidation and corrosion.

SUNVIS 800 OILS—Special heavy-duty lubricating oils used in railroad diesel engines equipped with silver-alloy bearings.

SUNVIS 2200 AND SUNVIS 2300—Heavy-Duty Supplement #1 and Supplement #2 quality oils respectively. For use in diesel engines where high-sulfur fuels may be encountered.

DYNAVIS OILS—For internal combustion engines operating at moderate loads and speeds. These low-pour-point, high-viscosity-index, inhibited oils help prevent formation of harmful corrosive and sludge-forming acids.

CIRCO OILS—Straight mineral oils for general lubrication of industrial machinery. Unsurpassed for once-through applications, regardless of operating temperatures.

SUNTAC OILS—Recommended for general lubrication of all machines subjected to sudden shocks and load reversals. Compounded to increase adhesiveness, Suntac Oils cling to bearing surfaces and supply constant, superior lubrication.

STEAM CYLINDER OILS—Lubricants of high flash and fire point for saturated or superheated steam conditions and for worm gear speed-reduction units.

SUNOCO WAY LUBRICANT—Eliminates "stick-slip" of tables and scoring of ways. Noncorrosive, with outstanding metalwetting and adhesive properties, ample viscosity and E.P. qualities. Approved by 36 leading machine tool manufacturers.

ROCK DRILL OIL—High-film-strength oil for use in jackhammers, stopers, drifters, and similar equipment.

INDUSTRIAL GREASES

Sun grease increases steel mill production by cutting bearing failures 92%.

SUN GUN GREASES—Smooth greases made with medium-viscosity oil. Stable under pressure in power and booster guns.

"JOB PROVED" IN EVERY INDUSTRY **SUN**

SUN ADHESIVE PRESSURE GREASES—Won't drip or splash. Excellent lubricants for open-gear applications.

SUN DARK PRESSURE-SYSTEM GREASES—For power-driven central grease lubricating systems in heavy industries. Also used as "medium cup greases."

SUN MINE CAR GREASES—Available in several grades. Suitable for both antifriction bearings and plain-bearing cavity-type wheels.

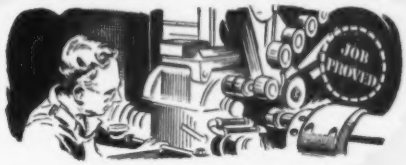
SUN MINING MACHINE LUBRICANT—Semifluid. For use where a light but adhesive grease is required. Resists separation and decomposition.

SUN ROLLER BEARING GREASES—For use on electric motors and generators and high-temperature machinery equipped with ball or roller bearings.

SUN GEAR COMPOUNDS—Black adhesive open-gear compounds and wire-cable greases. Recommended for power presses, mining machinery, worn reduction mills, crushers, pump gears, etc.

SUNOCO TRACTOR ROLLER COMPOUND—For crawler-type tractors. Provides good lubrication with exceptional sealing qualities.

METALWORKING OILS



Ball bearing manufacturer finds that Sunicut increases tool life 15%, eliminates sludging.

SUNICUT—Straight (non-emulsifiable) transparent cutting oils. Various grades for automatic screw machines and heavy-duty machining operations. Permit high speed production with excellent finishes, long tool life.

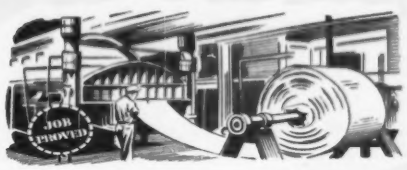
SUNOCO EMULSIFYING CUTTING OIL—An emulsifiable oil which produces a stable white emulsion. Efficient and economical cooling and lubricating medium for turning, milling, drilling, and other metalworking operations on both ferrous and nonferrous metals. It is also an excellent grinding coolant. Available in heavy-duty grades too.

SUN QUENCHING OILS—Specially refined oils designed to aid development of maximum physical properties in a wide variety of steels.

SUN TEMPERING OILS—Specially refined oils for tempering steel. Because of their low carbon content and stability under heat, these oils have an unusually long service life.

SUN ROLLING OILS—Straight and emulsifying oils which will permit maximum production in rolling steel, aluminum, brass, and copper.

RUBBER-PROCESS AIDS



Two Sun rubber-process aids save manufacturer $6,000 a year by taking the place of five competitive products.

CIRCOSOL-2XH—An elasticator and process aid for natural rubber and especially for GR-S. Outstanding for sponge rubber.

CIRCO LIGHT PROCESS-AID—A processing agent and excellent softener for natural rubber, natural rubber reclaims, and neoprene synthetic rubber. Used for GR-S to some extent.

SUNDEX-53—An inexpensive product suitable for processing GR-S and blends of GR-S and natural rubber. An established process aid for rubber footwear stocks and semihard rubbers.

CIRCOMAR-5AA—A dark-colored product for processing natural and GR-S rubber used in tire-making. Also used in reclaiming natural-rubber scrap. Replaces asphalt fluxes. Free-flowing at room temperature.

REFRIGERATION OILS

Hotel turns to Sunisо for its ice-making equipment; eliminates separation troubles, cuts oil costs 20%.

SUNISO REFRIGERATION OILS—High-quality oils having extremely low pour points, extremely low wax-separating characteristics, a high degree of stability, and long life. Initially neutral and resistant to formation of detrimental acids. Sunisо grades are available to meet all low, normal, and high temperature conditions. The most widely used oils in refrigerating and air-conditioning.

SUNOCO WAXES

Waxes, "tailor made" to provide the exact properties demanded by different industries, are now available from Sun's new multimillion-dollar wax plant. Revolutionary manufacturing methods make it possible to retain only the wax portions desired for a particular use, while discarding those which might be detrimental.

Sunoco Waxes are precision-controlled for quality and uniformity of all physical and chemical characteristics important to the user. The various grades of Sunoco Wax are recommended on the basis of their ability to give superior performance on the specific job.

TEXTILE OILS

Sunotex replaces three formula components in textile mill; also saves 25% on costs.

SUNOTEX TEXTILE-PROCESS AIDS—Designed to impart desired additional properties to various fibers during their processing from the raw state into a manufactured product. All Sunotex textile-process aids are emulsifiable in water. Highest rating in Fade-Ometer tests.

SUN COTTON CONDITIONERS—Processing materials which prevent waste by cutting down excessive amounts of fly (fine air-borne lint particles).

SUN ASBESTOS FIBER CONDITIONER—Sprayed on asbestos during processing to keep fibers from being damaged or broken down. Harmful dust is minimized when this product is used.

SUN CORDAGE OILS—Generally used alone, but adaptable to various formulas used by cordage manufacturers. Selected products, highly compatible with additives.

SUNOTEX MACHINE OIL—One lubricant for nearly every kind of textile machine. A high-quality mineral oil and additive combination which prevents rust, clings to moving parts, and minimizes wear. Scours out of all kinds of fabrics easily and completely.

ADDITIONAL INDUSTRIAL PRODUCTS

SUN SOLVENTS—Sun Spirits for the thinning of paints, varnishes, and enamels, for metal-cleaning, and certain types of processing and extraction ... a pure, water-white petroleum solvent free of corrosive sulfur. Other Sun solvents with special properties are available for the chemical industry.

SUN LEATHER OILS—Petroleum-base leather oils. Used for obtaining the desired tensile strength, proper temper, and controlled moisture content. Maintain a light even color, mix well, and distribute evenly.

INDUSTRIAL PRODUCTS

SUNOCO®

High Strength Aluminum Alloy, Nylon-Armored, in a Twister Bobbin that meets every test

CONTROLLED BALANCE AND CONCENTRICITY Made to rigid specifications, with precision dies, ACROPAK Bobbins offer uniform balance and concentricity well beyond previously accepted standards.

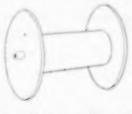
EXCEPTIONAL STRENGTH Aluminum alloy barrel and flange are joined by high-strength metal ring lock. Resulting assembly withstands most severe crushing strains and end thrusts of nylon yarn without distortion. Precision fit prevents yarn entrapment.

LIGHT WEIGHT Lighter than conventional spools and bobbins, ACROPAKS will permit faster handling with less operative fatigue. Also, twisting speeds can be higher with reduced spindle wear.

NYLON ARMORED Tough, resilient nylon rims reduce possibility of nicks and snags, resist wear of yarn drag, and may be replaced at little cost. Nylon bearings absorb shocks, retain accurate, uniform spindle fit and assure minimum of traverse setting.

COLOR-IDENTIFIED Flanges of ACROPAKS can be anodized in a variety of colors to permit identification of type of yarn carried.

LONGER LASTING, LOWER COST Since the service life of ACROPAKS is far greater than that of wood and fiber construction bobbins, the cost-per-year is much less. You save on bobbin inventory while you gain on improved production and waste elimination.



ACROPAK TAKE-UP BOBBIN

Aluminum alloy flanges and barrel are joined by high-strength metal ring lock. Resulting assembly withstands most severe crushing strains and end thrusts of nylon yarn without distortion. Precision fit prevents yarn entrapment.

Gudgeon is stainless steel. Precision manufacture assures uniform concentricity and balance which exceeds accepted standards.

Reduced weight eases handling. Unaffected by high steaming temperatures. Anodizing, in variety of colors, prevents yarn stain, permits yarn identification.

Ready... the US answer to bobbin-killing synthetics

ACROPAK

VERTICAL SPINNERS, TAKE-UP AND HEADLESS BOBBINS

Patents applied for

You saw these completely new and different ACROPAK Bobbins at the Textile Show, and the oft-repeated question was . . . "when can I get them?"

Now, rigorous pretesting of every design feature under the toughest processing condition has been completed. Production of the proved designs is in full swing. Your orders can be placed now, and soon these money-saving ACROPAK Bobbins can be at work on your frames, ending the bobbin casualties that have been common for years in processing nylon and other synthetics.

Remember that ACROPAK Bobbins are entirely *new*—not an old type bobbin brought up to date. New techniques and new materials provide lightness, strength, and durability unequalled by any comparable bobbins.

BOOST PRODUCTION — SAVE YARN — DEFY WEAR

You can run higher speeds because there is no "dead" weight to wear spindle bearings, and because basically balanced ACROPAK Bobbins start true—stay true. You eliminate slubs, breaks, and waste because yarn flow over the lastingly smooth, tough nylon rims of the ACROPAK vertical spinner is unimpeded. Since they are virtually indestructible in normal use, your bobbin cost-per-year will be lower than you ever believed possible.

ACROPAK Bobbins can be made to fit all standard spindle dimensions and drives. Your U S representative is prepared to show you samples and discuss your synthetic yarn processing problems. U S Bobbin & Shuttle Co., Lawrence, Mass.

ACROPAK HEADLESS BOBBIN

Strength and durability far beyond normal need assured by Acrometal fabricated tube of aluminum alloy and gudgeon of stainless steel.

Much lower initial cost than for mandrel-cylinder assembly. One operation instead of five in take-apart means up to 75 per cent time saving. Absolute concentricity and balance assured by unique construction.

Can be anodized in various colors for yarn identification and to prevent yarn stains.

ACROPAK

Made by Acrometal Products, Inc., World's Leading Manufacturers of Drawn Aluminum Bobbins and Spools

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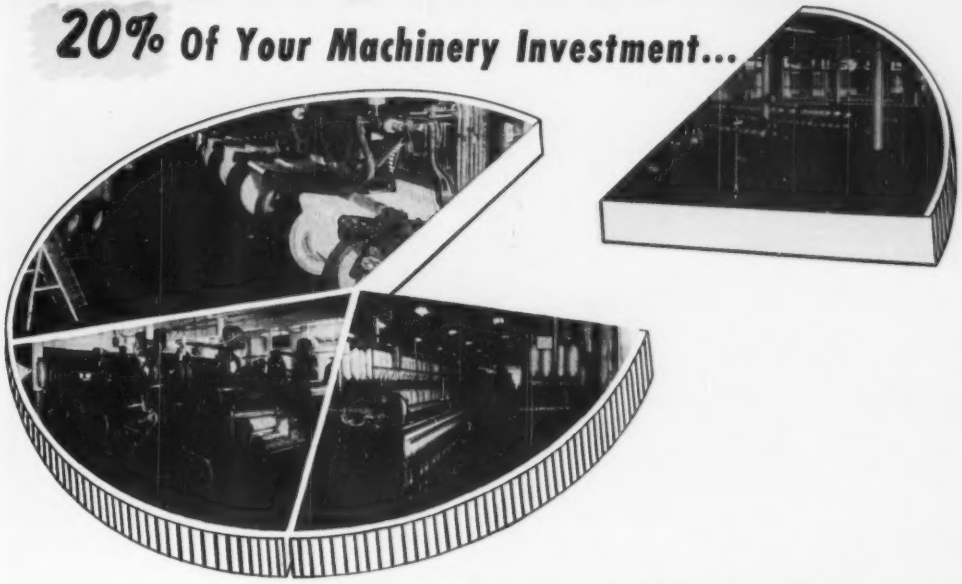

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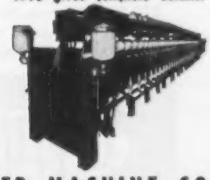
1. High speed winding of any type or count of staple yarn. Changeovers from cotton — to wool or worsted — to synthetics — quickly and easily made.
2. Produces any cone taper commonly used — any angle of wind from 9° to 18°.
3. Can be equipped to wind knitting cones, warping cones, parallel tubes, dye packages or short traverse cheeses. Winds cones on one side, tubes on the other, if desired.
4. Winds dyed yarn even when damp; also conditioned yarn.
5. Can be built to wind up to 7" traverse.

Foster FLEXIBILITY protects a major part of your capital investment in machinery. Bulletin A-95 gives complete details.



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While this is an average figure, subject to variation among individual mills, it still represents a *major* share of your investment in equipment.

And That's Why...

You can't afford to let your winders become prematurely obsolete! Today more and more mills are turning from one-fibre specialization. Fibre-integration within the mill is on the upswing. Unless your winders can keep pace with the trend, they are bound to be obsolete before their time. Then what of your 20%?

But You Can Protect Your Investment...

With proven FLEXIBILITY of Foster Model 102 Winders you can be ready and able to meet today's—and tomorrow's—changing fibre requirements. Even a short study of its FLEXIBILITY features should convince you that the Foster Model 102 is your ideal protection for your winding investment.

FOSTER F MODEL 102

THE FLEXIBLE WINDER FOR ALL TYPES OF STAPLE YARNS

Nylon bolster made by NYLON BEARINGS, Inc., 21 Vernon St., Whitman, Mass.

NYLON BOLSTERS RUN AS LONG AS 1560 HOURS BETWEEN LUBRICATIONS

Pay for themselves by lubrication savings alone... have shown no sign of wear on bolster or blade after 4 years of service

In actual mill tests, these nylon plastic bolsters have run for 1560 hours between lubrications. Oil and oiling costs are greatly reduced. In fact, savings in lubrication costs alone were enough to pay for this entire installation. But there's more to the story.

After four years of continuous service, nylon bolsters have shown no sign of wear toward the pull of the tape. Thus spindles stay in plumb. Costly oil pumping is virtually eliminated, as are time and labor spent on re-aligning spindles. And, of course, nylon bolsters need not be replaced with anywhere near the frequency of old-style bolsters.

There are other savings, too. Smooth operation saves input-power —up to 15%, depending on speed, package loading, oil viscosity and other relevant conditions. Savings in tapes—they last about three times longer because they do not become oil-soaked and rot. Savings in cleaning, too, because design of the nylon bolster makes removal of lint far easier, permits use of an air gun instead of painstaking wiping by hand.

The bolster is but one of many cost-saving applications of nylon plastic in mills. Demand for nylon currently exceeds supply. But we suggest you evaluate nylon textile machine parts for future use. We'll be glad to furnish names of firms who can supply you with these parts. Experimental quantities are available... we'll gladly work with you in suggesting or developing special applications of nylon plastic.

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☐ We are interested in further information on the bleaching of cotton knit goods.

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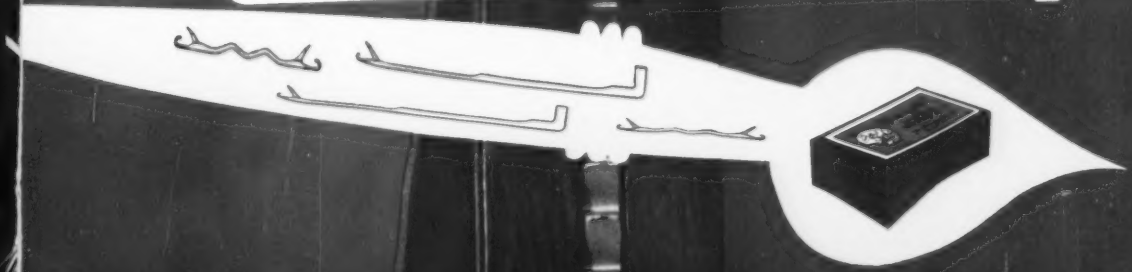

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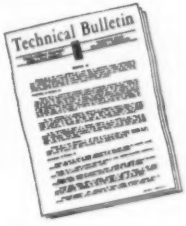

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From one Monsanto department...

YOUR CHEMICAL DIRECTORY FOR RAYON AND SYNTHETICS

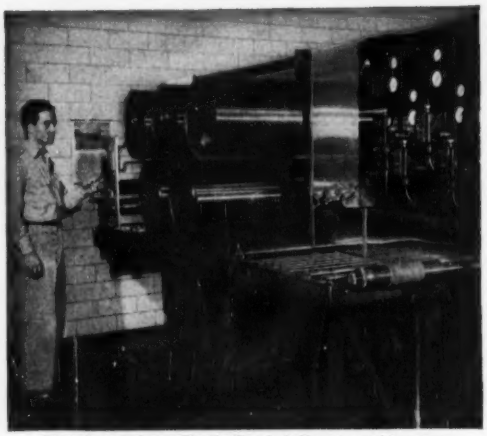
Sizing—Monsanto's Stymer S is being used on a broad scale for filament acetate, and now is gaining increased use on viscose. Stymer provides a tough, uniform, flexible size for the yarn; it carries off static electricity and provides good weaving properties. As a synthetic resin Stymer doesn't gel, so large mixes can be stored for long periods, and cleanup time is saved because Stymer won't clog pipes or valves. It doesn't build up on the dry cans.

Spinning—As in regular woolens and worsteds, Syton increases the yarn strength of *blends* spun on the woolen system. The use of Syton, colloidal dispersion of silica makes possible stronger and more uniform yarn. Stronger yarn means fewer ends down during spinning, with consequent production increases and labor time saved. Because of the increased yarn strength, it is also possible to spin closer to the limit spin and get increased fabric quality per pound of raw material.

Resin Finishing—Catalyst AC for both urea and melamine finishing offers a number of advantages. Resin baths are stable for considerably longer periods than those catalyzed with diamonium phosphate. Cure time is comparable or faster, and resin retention (measured after two washes) usually is greater. A number of mills have achieved an improved, softer hand on the finished goods through the use of Catalyst AC. And a number of mill men look upon Catalyst AC as insurance against some of the causes of odor.

Suitings—Wrinkle resistance by Resloom, Monsanto's melamine resin, has been very successful on the market on a wide number of constructions. Resloom provides a lively, springy hand which repels some wrinkles and sheds the rest. At the same time, Resloom provides durable washability on rayon fabrics.

Marquisettes—Crisp, durable finishes, with increased salability are provided by the Merlons, a series of styrene resin dispersions . . . each designed to give a specific effect on various fabrics and constructions. The Merlons can be combined with Santaloom, Monsanto's urea resin, to achieve a crisp finish, wrinkle resistance and washability.



Pilot plant slasher at Textile Chemicals Department laboratory.

Spuns—Durable crease resistance, and washability, is provided by the urea resin, Santaloom. Successfully applied, at low cost, on a wide variety of rayon constructions, Santaloom gives the *added* advantages of a fine, lively hand.

Dress Goods—The salability of rayon dress goods is further increased with the use of Monsanto's Merlons, styrene resin dispersions which give added body, and a "worsted-like" hand. The Merlons are a series of dispersions, which can be used separately or in combinations to produce a variety of effects on a given fabric. Generally, they provide a finish which is durable and low cost.

Flame Retardance—Rezgard A for viscose; and Rezgard E for acetate, are Monsanto's fugitive-type flame retardants. Durable to dry cleaning, the Rezgards do not alter tensile strength, hand, or other characteristics of the fabrics.

Slip Resistance—Monsanto's Syton, a dispersion of silica which promotes "inter-fiber drag," is also effective in controlling yarn slippage in underwear fabrics. Syton is effective on all types of synthetic and natural yarns.

Direct Dyed Goods—Monsanto's Dye Fixative 105 improves the wash fastness of direct-dyed goods and keeps the cost of the dyeing operation well within a low cost range. The dye fixative increases the color quality without adding substantially to the cost.

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Serving the Textile industry

A FAMILY OF CHEMICALS FOR COTTON AND WOOL

COTTON

Piece Goods—Sted, Monsanto's non-sudsing detergent, is powerful yet chemically mild, and won't damage the most delicate fibers. Sted works well in hard water without softeners. Easy rinsing saves time, labor and helps prevent odor.

Flame Retardance—Monsanto's Rezgard A, specifically designed for cotton, meets New York City standards for fire retardants on textiles. Rezgard is a fugitive-type, and water soluble, although it is durable for considerable periods of time. Rezgard does not alter tensile strength, hand, or other characteristics.

Dyeing—A powerful wetting and scouring agent, Monsanto's Sterox proves effective as a dyeing assistant, for a growing number of cotton finishers. Sterox competes favorably with other detergents on a money-value basis.

Merlon—The salability of cotton is greatly increased by the use of the Merlons . . . Monsanto's series of water dispersible resin polymers. The Merlons provide a fine, crisp, durable hand on cotton sheetings . . . a percale-like finish for very little more than the cost of starch. Wear resistance also is improved.

Tickings—The Merlons improve hand, as on sheetings described above. In addition, a special Merlon formulation gives improved wear resistance on tickings.

Dress Goods and Suitings—Resloom, Monsanto's melamine resin, provides durable wrinkle resistance on a wide range of cotton constructions. Resloom has proved successful on millions of yards now in consumer hands; the cotton snubs some wrinkles and sheds the rest. In addition to wrinkle resistance, Resloom provides durable stability.

Direct Dyed Goods—Improved washfastness is gained by the use of Monsanto's Dye Fixative 105. In direct dyed goods, the dye fixative improves the quality without substantially raising the finishers' costs.

Reg. U. S. Pat. Off.: Stymer, Syton, Resloom, Merlon, Santaloom, Rezgard, Sted, Sterox

WOOLENS & WORSTEDS

Stock—For the toughest cleaning jobs in the world, Monsanto offers two powerful detergents, Sterox in liquid form, Sted in drypowder form. Monsanto offers specific formulations for your particular cleaning problem. Both detergents are powerful and yet chemically mild, and *rinse easily* . . . saving time and labor.

Syton—Monsanto's colloidal dispersion increases yarn strength from 10%-to-30% depending upon the particular mill. Applied at the picker or gill box, Syton provides better carding, more uniform roping or roving. Because of increased strength, ends down are reduced and it's possible to spin closer to the limit spin. Mills, therefore, get the most value per pound of expensive stock.

Rug Yarns—In scouring rug yarns, Monsanto's Sted gives a uniform, clean base for dyeing. Its chemical action is mild, yet very powerful. Because it is non-sudsing, Sted rinses easily and mills consequently save operating time and labor.

Shirtings, Blankets—The foremost and outstanding method for wool shrinkage control. Woolens with Resloom washability are already on the market, and successful in the most exacting consumer tests. As many as 75 washes with less than 5% shrinkage. Through the new processes, Resloom can now be applied without investment in expensive curing equipment.

Woolen Suitings—Monsanto's Merlon, a series of styrene resin dispersions, gives added body to woolen suitings. Monsanto can recommend one of the Merlon dispersions exactly suited to individual wool fabric requirements.

Suitings—Resloom builds body into the fabric, in addition to washability. The bodying effect produces better drape and better tailor-ability . . . in addition to a hand which retains the fineness of traditional wool suitings.

Piece Goods—Monsanto's liquid-form Sterox is now used in continuous scouring systems for piece goods. Sterox is a powerful, yet chemically mild detergent, which *rinses easily* . . . and cleans thoroughly throughout without damaging the most delicate goods.

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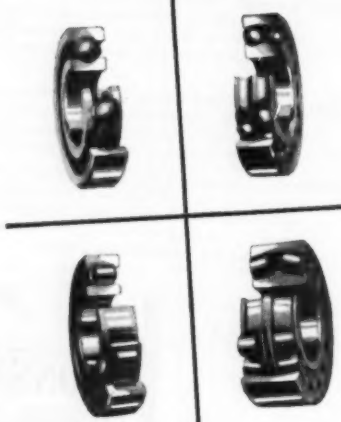

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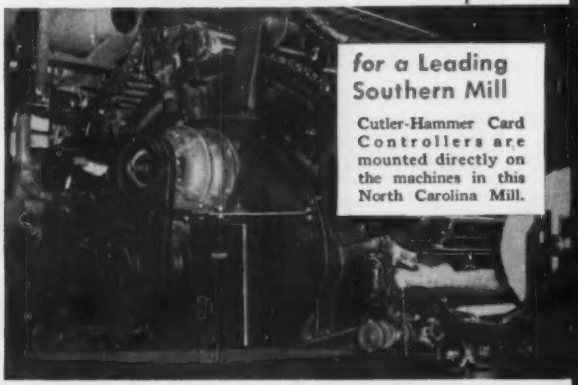
MOTOR CONTROL FOR THE TEXTILE INDUSTRY

for Amoskeag-Lawrence.

The Amory Mill at Manchester, N. H., uses Cutler-Hammer Combination Starters on these cone reducers.



for a Leading Southern Mill

Cutler-Hammer Card Controllers are mounted directly on the machines in this North Carolina Mill.

One question that answers itself

No responsible textile mill executive will decide the question "*What* motor control?" except in the light of *one fact*. And that is the fact that *profitable* textile production results from the integration of many machines into a single harmonious production unit. The need for such integration spells out the answer to the question right there. For this integration certainly calls for the *best* motor control engineering experience available . . . certainly calls for the *most competent* motor control design and construction available . . . certainly calls for a *proved dependability* in motor control performance. There is only one make of motor control that meets all these specifications, the product of the pioneering specialists in motor control since 1892. CUTLER-HAMMER, Inc., 1457 St. Paul Avenue, Milwaukee 1, Wisconsin.

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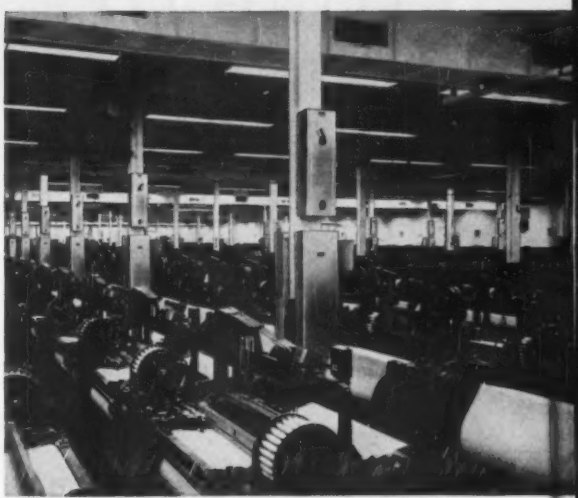


for Springs Cotton Mills

at Kershaw, S. C., plant. Cutler-Hammer Loom Switches for each group of 10 looms are here mounted in single enclosures on adjacent building columns above mill traffic. Note also single combination starter installed ahead of each group.

CUTLER-HAMMER LOOM SWITCH

for fewer shutdowns, greater production, easier maintenance

Pushbutton operation—most preferred for this type of starter. Stop button can be padlocked.

Stronger, smaller, drawn steel case. Unique welded-steel mounting pedestal available to create a *complete* assembly with unparalleled resistance to mechanical damage.

Lint-proof enclosure—close fitting cover (even around pushbutton well) limits entrance of lint and dust.

Service proven, positive make, quick break operating mechanism built on *steel* framework.

"Out in the open" contacts for quicker inspection and easy renewal *on the job*. Most dependable overload protection—famous Cutler-Hammer eutectic element type—prevents unnecessary shutdowns without sacrifice of *positive* motor protection.

Vibration resistant. Mechanism "floats" in truly effective *live* rubber mounting bushings.

STEEL CALENDER RACKS

DESIGNED FOR SAFETY AND LONG LIFE

for KITSON, SACO-LOWELL, ATHERTON, HOWARD-BULLOUGH, DOBSON & BARLOW and POTTER & JOHNSON pickers

For safety in operation, the tongue and grooved cut-steel gear rack and rack section of this patented calender rack are firmly fastened in place with a 3/16" soft-stock shear pin set in hardened tool-steel bushings.

With the exception of the cast iron side plates on the head, the entire rack assembly is constructed of steel for hard wear and long life. One assembly, installed 10 years ago, has required only 85c for repairs.

The rack head is equipped with hardened steel ball bearing rollers and hardened steel pins. Furnished complete with cut-steel pinion rack gears.

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA

If you'll try them you'll buy them!

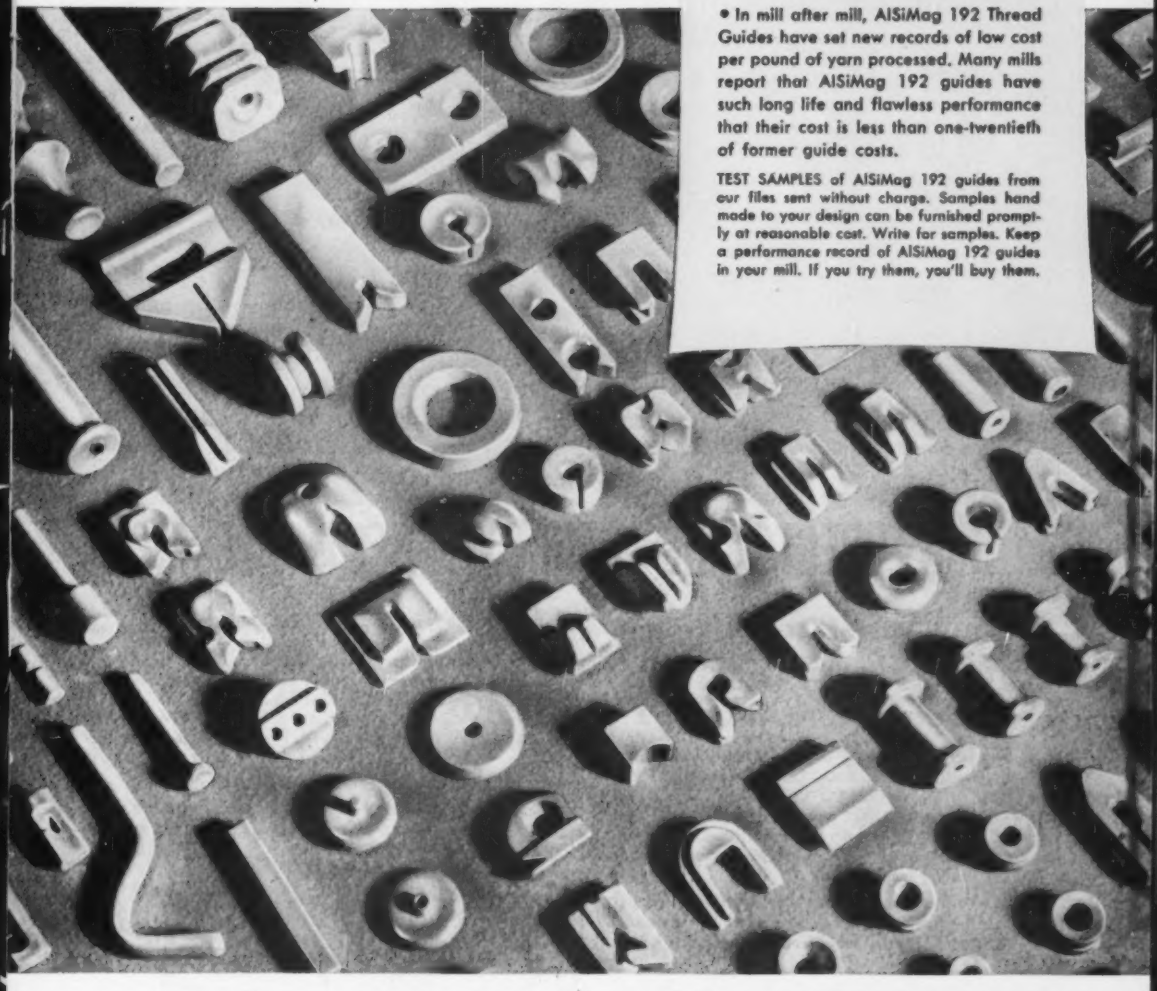
ALSIMAG® 192

U. S. PATENT NO. 2, 214, 705 AND OTHER CLAIMS PENDING.

CUSTOM MADE Thread Guides

• In mill after mill, AlSiMag 192 Thread Guides have set new records of low cost per pound of yarn processed. Many mills report that AlSiMag 192 guides have such long life and flawless performance that their cost is less than one-twentieth of former guide costs.

TEST SAMPLES of AlSiMag 192 guides from our files sent without charge. Samples hand made to your design can be furnished promptly at reasonable cost. Write for samples. Keep a performance record of AlSiMag 192 guides in your mill. If you try them, you'll buy them.

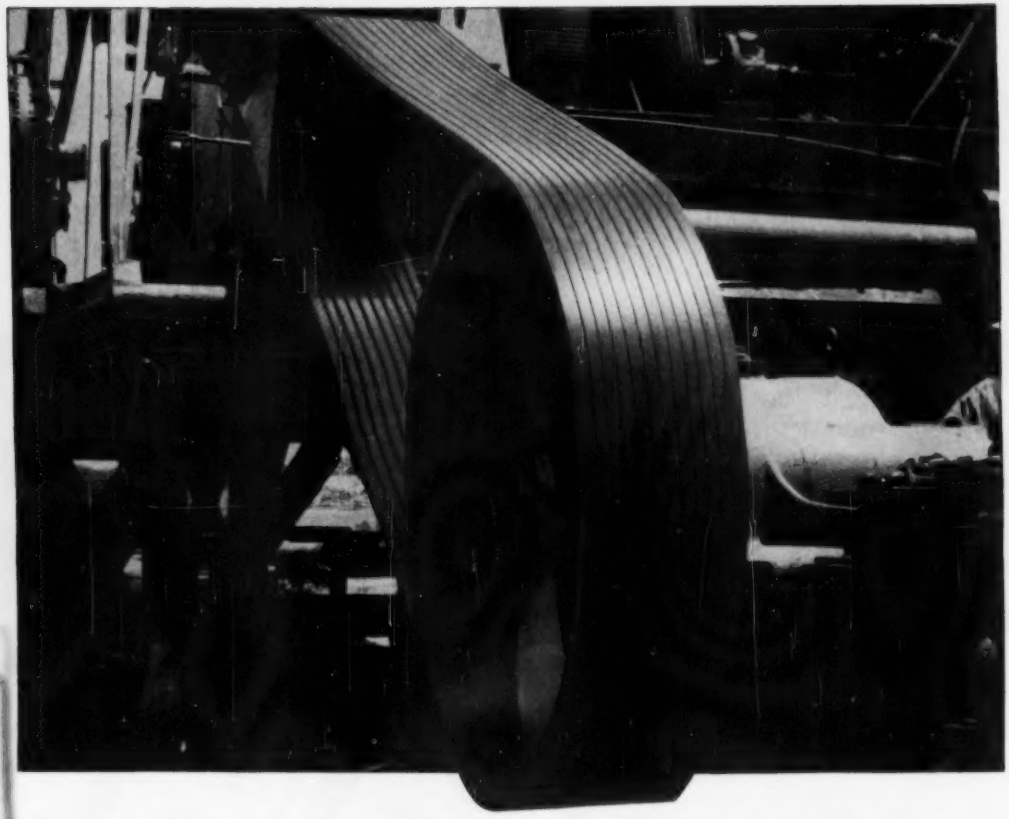


AMERICAN LAVA CORPORATION

49TH YEAR OF CERAMIC LEADERSHIP

CHATTANOOGA 5, TENNESSEE

OFFICES: METROPOLITAN AREA: 671 Broad St., Newark, N. J., Mitchell 2-8159 • CHICAGO, 228 North LaSalle St., Central 6-1721
PHILADELPHIA, 1649 North Broad St., Stevenson 4-2823 • LOS ANGELES, 232 South Hill St., Mutual 9076
NEW ENGLAND, 38-B Brattle St., Cambridge, Mass., Kirkland 7-4498 • ST. LOUIS, 1123 Washington Ave., Garfield 4959



BULL DOG V-BELTS ARE THEIR OWN BEST SALESMEN

. . . they resist cracking and deterioration under severe flexing!

If you are less than happy with your V-Belt performance and life — install a set of BULL DOG V-BELTS. THEY WILL SELL THEMSELVES TO YOU! *They are processed for longer life* of completely new compounds under the closest quality controls. Result: Users everywhere are benefiting by cooler running V-Belts which resist cracking and deterioration under severe flexing.

You'll find other good reasons why Bull Dog V-Belts are paying off — (1) in the *high tensile strength* of the exclusive Bull Dog Cord Section which can take heavy loads and absorb severe shock loads . . . (2) in their low stretch due to a new technique of processing Bull Dog Cords which assures minimum slippage and adjustments . . . (3) in their tough, *extra-wear-resistant* covers of bias-cut heavy fabric which seal the belt against the penetration of grease, moisture, dirt.

Back of these better-built Bull Dog V-Belts is the BWH good name — a name renowned for quality mechanical rubber products for 72 years. There's a BWH distributor in your territory. Call him today.

TOUGH PROBLEMS INVITED — Don't hesitate to ask us or your nearest BWH distributor about your power transmission belting, conveyor belting and hose problems. We are specialists ie making mechanical rubber products work *better, longer.*

BWH
DEPENDABLE RUGGEDNESS

Another Quality Product of

BOSTON WOVEN HOSE & RUBBER COMPANY

Distributors in all Principal Cities

PLANT: CAMBRIDGE, MASS., U. S. A. • P. O. BOX 1071, BOSTON 3, MASS.

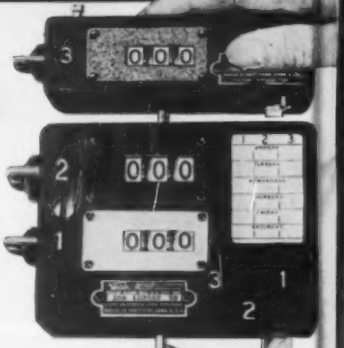
Open Up New Savings with Modern Veeder-Root Reset 2-3 Pick Counters

Yes, every time you open up a box that holds a brand-new Veeder-Root 2-3 Convertible Pick Counter, you open up these new savings:

TIME IS SAVED (not to mention wear and tear on the hands) by Veeder-Root's streamlined plastic reset knobs that fit the fingers *and don't have to be pulled out.* So weavers can reset *New* 2-3 Pick Counters in double-quick time . . . without knocking themselves out!

MONEY IS SAVED because Veeder-Root's *Locked Wheels* resist mechanical overthrowing . . . and because they're constructed for strength plus low weight, to reduce wear from vibration.

Order *New* Veeder-Root 2-3 Pick Counters *now* . . . for the sooner they're installed, the sooner they'll pay for themselves. Get in touch with the nearest office.



VEEDER-ROOT INCORPORATED

World's Largest Manufacturers of Counting & Computing Devices

HARTFORD 2, CONNECTICUT • GREENVILLE, SO. CAROLINA

In Canada: Veeder-Root of Canada, Ltd., 955 St. James Street, Montreal 3.
In Great Britain: Veeder-Root Ltd., Kilspindie Road, Dundee, Scotland.

"Counting House of the Textile Industry"

World's Most Complete Line of Textile Counters . . .

New "Dozens" Counter for Glove and Hosiery Mills

2-3 Convertible Hank Counter

Loom Cut Meter

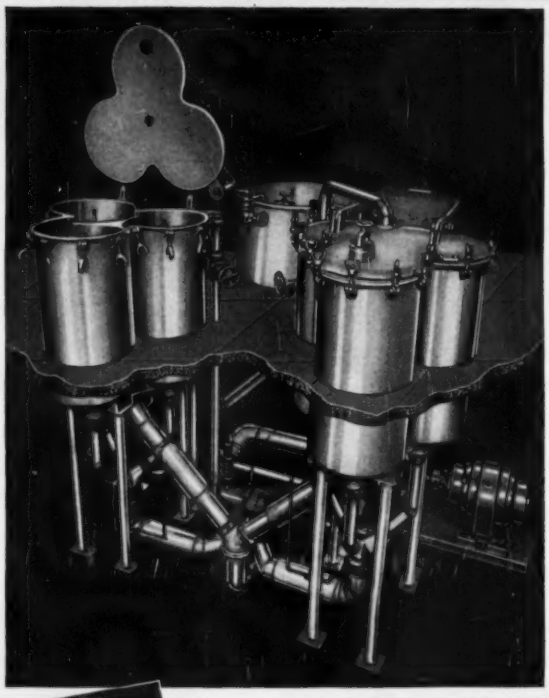
2-3 Revolution Counter for Knitting Machines

Above: Adding 3rd Counting Unit to 2-3 Convertible Pick Counter

. . . all these and scores of other types . . . Send for Catalog T-48

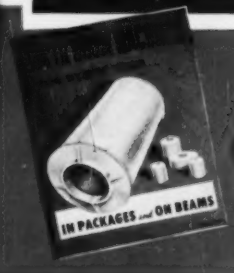
Now... as many as 6 Beams or Yarn Carriers

Can be Dyed at the Same Time in the Same Dye Bath!



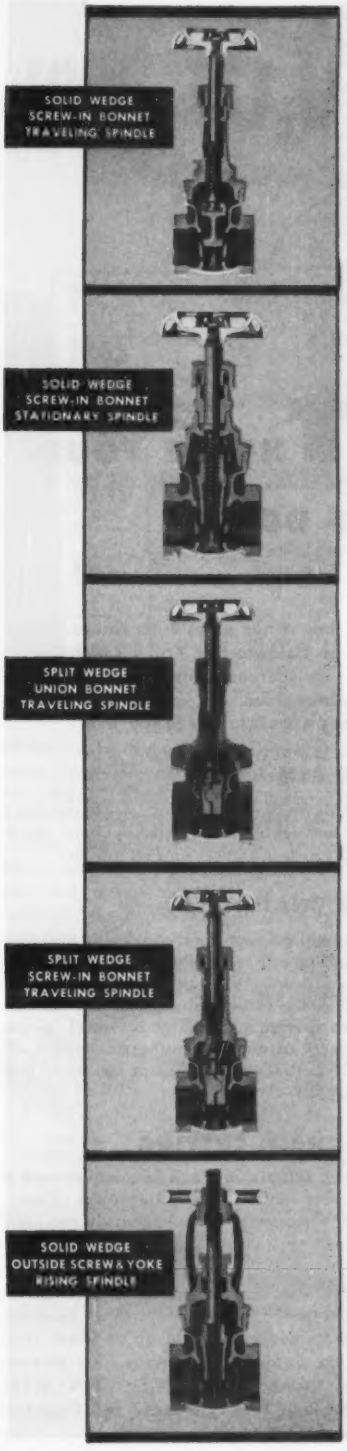
Uniform dyeing of yarn on beams or in packages can be attained only when each and every beam or package carrier of yarn is dyed simultaneously under identical conditions. And identical conditions can be assured only in the same dye bath. The SMITH-DRUM Combination Beam and Package Dyeing Machine was the first to make this possible and practical . . . by providing two-kier and three-kier machines . . . designed so that up to the full capacity of the machine, all the beams or yarn carriers are subjected to the same dye bath and the same dyeing conditions of pressure and temperature, all at the same time. Then, a few years later, the same principle was employed in a four-kier machine.

Now . . . a *six-kier* machine is available, which permits dyeing not only two, three or four but up to *six* beams or yarn carriers at *one time* . . . in the *same* dye bath . . . with the *same* liquor ratio . . . under the *same* operating conditions of flow, pressure and temperature . . . and with uniform distribution of additions to the dye bath. Arrange for one of our representatives to discuss these important features with you . . . a letter, 'phone call or wire will receive our prompt attention.

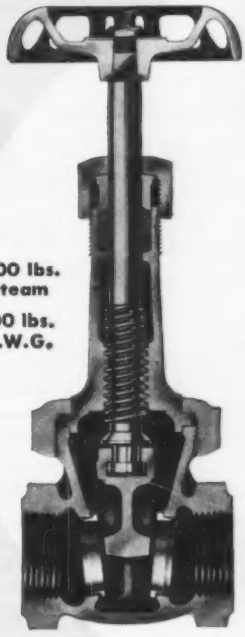


Write for Catalog No. PBD-801 TODAY!

SMITH, DRUM & COMPANY
Allegheny Avenue at 5th Street
Philadelphia 33, Pennsylvania



Specify JENKINS for your Best Buy in Bronze Gates



200 lbs. Steam
400 lbs. O.W.G.

JENKINS FIG. 270-U
Solid Bronze Wedge
and FIG. 270-UN
Nickel Alloy Wedge
Traveling Spindle — Union Bonnet
BRONZE GATES

Monel and Bronze Seating Combination Adds Years of Extra Service Life

In Fig. 270-U, a high quality bronze wedge seats against MONEL rings expanded in the body. With this sensible design, the wear affects only the most accessible part—the bronze wedge—which can be easily replaced by slipping a new one on the stem when necessary. Records in every type of service prove it an excellent combination for lasting economy.

Fig. 270-UN, with a nickel alloy wedge, is recommended for exceptionally severe conditions of rapid wear and corrosion.

The Gates For Your Toughest Services

Made in sizes from ¼" to 2", Fig. 270-U or Fig. 270-UN will provide unequalled economy in any 200 lb. steam, 400 lb. O.W.G. service. Compare performance, especially where conditions are most destructive to valves, as in oil refineries, dye houses, chemical, rubber, and food plants. You'll find there are no other valves like them.

Whatever your need in Bronze Gates, you'll find the right valve for the service in Jenkins complete line. Thirty-five different patterns are available for steam pressures up to 300 lbs., O.W.G. pressures up to 600 lbs. All are built to Jenkins unvarying high standard which makes them the longest-lasting, lowest-upkeep valves that money can buy. Jenkins Bros., 100 Park Ave., New York 17. Jenkins Bros., Ltd., Montreal. Sold through leading Industrial Distributors.

WRITE FOR THIS FOLDER
Form 181-B It describes the Fig. 270-U and other popular Jenkins Bronze Gates or, ask your Jenkins Distributor.

JENKINS VALVES
LOOK FOR THE DIAMOND MARK
SINCE 1864 TRADE JENKINS MARK

Jenkins Bros.

IT HOLDS YOUR COSTS DOWN!

Here's just one of the many little things that are designed into Baldwin-Rex Roller Chains to add extra life . . . cut your maintenance and repair costs! Pin ends throughout the entire line are *copper plated!* Here's what it means to you:

1 LONGER PIN LIFE

Copper plating on pin ends permits case hardening of the bearing surfaces of the pin to the optimum degree. This file-hard surface assures longest pin life.

2 LONGER CHAIN LIFE

Since copper will not absorb carbon during heat treatment, pin ends remain relatively soft, permitting more secure riveting. Soft ends permit "upsetting" of the pin in the side plates, assuring tight fit with no possibility of destructive rotating in the plates. It assures "greater holding power" of the pin in the side plates. No "weak links" in Baldwin-Rex Chains caused by poor riveting!

3 EASIER CHAIN CUTTING

Comparatively soft pin ends can be easily ground off prior to driving out the pins or pin links. Thus, if disassembly is necessary, it can be quickly and easily done.

The longer chain life made possible through the copper plated pins is but one of the many Baldwin-Rex extra advantages that add up to lower costs to you. For the complete story, write for your copy of Bulletin 50-70. BALDWIN-DUCKWORTH, Division of Chain Belt Company, 346 Plainfield Street, Springfield 2, Mass.

BALDWIN-REX ROLLER CHAINS

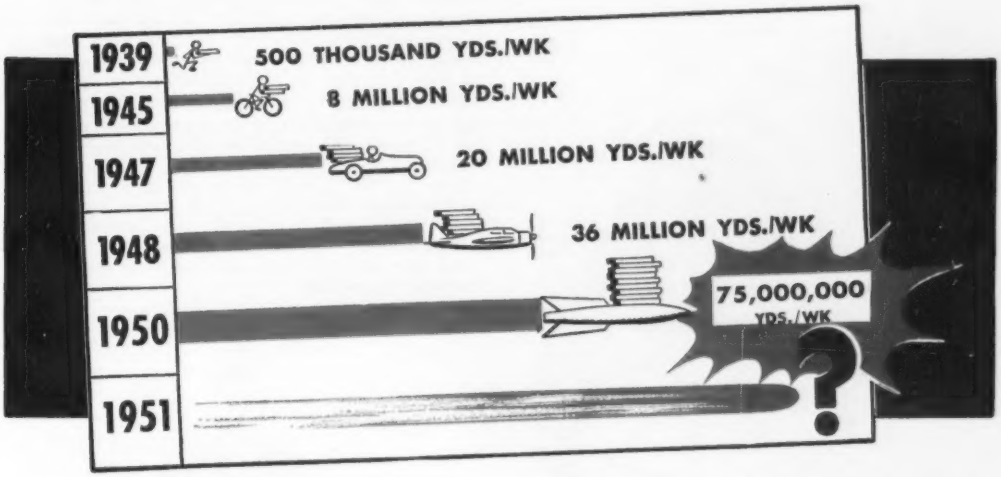
BALDWIN-DUCKWORTH

DIVISION OF CHAIN BELT COMPANY

a complete line from ¼ to 2½-inch pitch

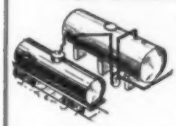
NOW 75,000,000 yds. per week

BLEACHED IN DU PONT CONTINUOUS PEROXIDE SYSTEMS



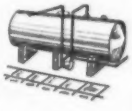
Sufficient capacity to bleach more than ½ of the annual production of cotton piece goods in the United States! That's the potential of Du Pont Continuous Bleaching Systems now in operation or under construction. And latest total production figures indicate an output of seventy-five million yards per week from present installations . . . a meteoric increase over the figure established in 1939, when Du Pont's first units were put into commercial operation.

FOR GREATEST ECONOMY CONSIDER



Tank Car Deliveries

If you need 5000 lbs. or more of "Albone" 35 or "Albone" 50 Hydrogen Peroxide per month, you'll find a storage tank installation economical. For smaller consumers in Metropolitan New York, Boston, Philadelphia, tank truck deliveries can be made.



Tank Storage at the mill

Since 1939, continuous bleaching has become well-established throughout the world as the modern way to speedy, economical, high-quality bleaching. Today, systems of all types are available to meet the specific requirements of any textile mill, large or small.

Why not investigate the advantages of Continuous Bleaching for your mill? Du Pont will be pleased to work with you . . . study your requirements . . . help you select proper equipment and assist in many other ways. Send for our new book that illustrates typical installations and gives other important information. Write to E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Dept., Wilmington 98, Delaware.

DU PONT
CONTINUOUS PEROXIDE BLEACHING

DU PONT

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

E. I. du Pont de Nemours & Co. (Inc.)
Electrochemicals Department, Wilmington 98, Del.

Please send me more information about Du Pont Continuous Peroxide Bleaching Systems.

Name_____ Title_____

Firm_____

Street & No._____

City_____ State_____

Have you seen . . . THE NEW, "UNI-PULL" TEXTILE DRIVE?

This Most Modern Individual Belt Drive Lasts Longer . . . Is Easier on Bearings

When you modernize the power transmission in your mill, be sure to investigate the new "Uni-Pull" drive.

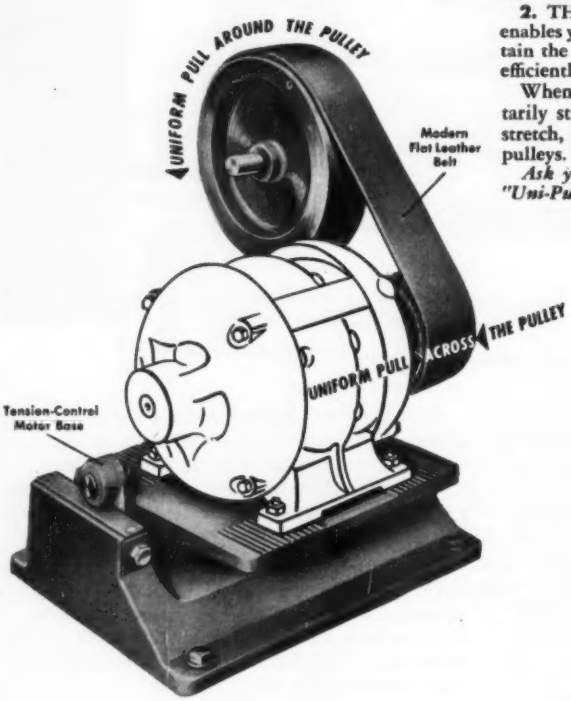
This compact, individual belt drive gives you uniform pulling power with minimum tension both across and around the pulley faces. Here's why.

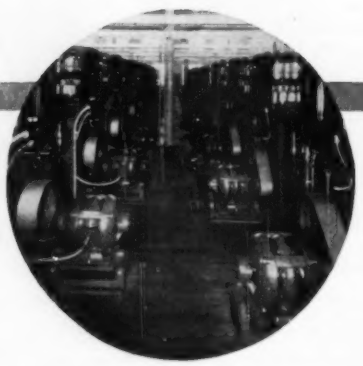
1. THERE'S ONLY *ONE* BELT . . . a modern, flat leather belt. This gives you the *same* strong pulley grip, the *same* pulling power over the entire belt contact area on the pulleys. No separate "pulls" that can become uneven. The entire face of the belt works as a unit . . . no part of it can ever loaf.

2. THE TENSION CONTROL MOTOR BASE enables you to predetermine and automatically maintain the proper belt tension to drive your machines efficiently.

When the belt "leans" into a peak load, it momentarily stretches. The base instantly adjusts for this stretch, keeping the tension the same around the pulleys. You get a smooth, fast, sure start.

Ask your leather belting supplier about the new "Uni-Pull" textile drive.





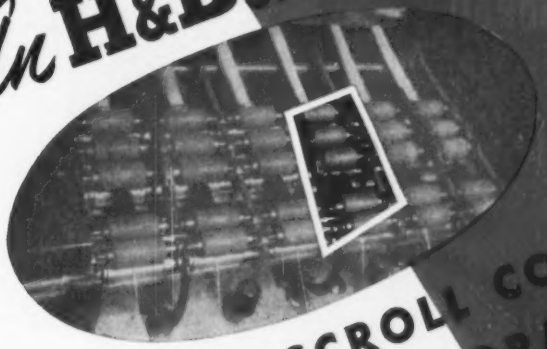
American **LEATHER BELTING** *Association*

Headquarters for Authentic Power Transmission Data

41 PARK ROW, NEW YORK 7, NEW YORK

AL-34

An H&B Exclusive!



PATENTED SCROLL CONDENSER ON H&B HIGH DRAFT SLUBBERS

Outstanding in fiber control and flexibility, H & B High Draft Slubbers represent a new high in operating efficiency. And here's why . . .

The very heart of the H & B System is the patented scroll condenser used on both the 4-roll and 5-roll drafting arrangements. As illustrated here, the sliver is first subjected to an extended break draft, condensed, and then drafted again.

In the 5-roll system, shown above, the drafted cotton leaves the third roll in a thin web and the elliptical-shaped, flared mouth of the scroll condenser compacts the sliver bulk without impeding the action of the fibers. The scroll method of compacting the fibers provides an action which assures an even strand.

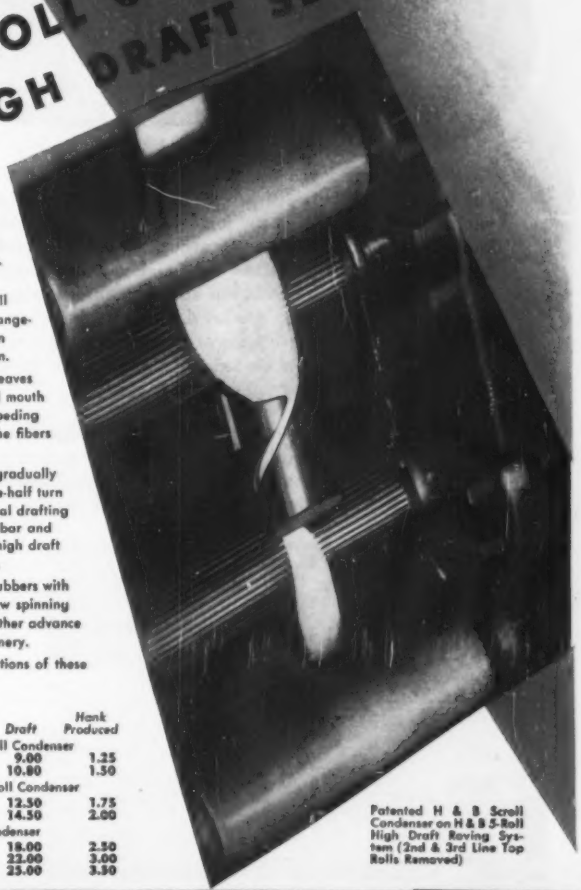
The scroll condenser turns over the condensed ribbon gradually without disturbing parallelization and gives it an actual one-half turn of twist to promote better condensing and control in the final drafting zone. Made of bakelite, the scroll condenser is fixed on a bar and traverses in conjunction with the sliver trumpet. No other high draft slubber can operate with better fiber control or flexibility.

Offering a wide drafting range, the H & B High Draft Slubbers with scroll condensers are a natural complement for H & B's new spinning systems in a mill's modernization plans. They represent another advance in H & B's exclusive achievements in modern textile machinery.

Ask your H & B representative about the many installations of these High Draft Slubbers now in operation.

RANGE OF DRAFTS

Drawing Sliver From Cans	Hank Sliver	Draft	Hank Produced
One Process Roving on a 10" x 5" frame with Scroll Condenser			
60 grain	.139	9.00	1.25
60 grain	.139	10.80	1.50
One Process Roving on a 9" x 4½" frame with Scroll Condenser			
60 grain	.139	12.50	1.75
60 grain	.139	14.50	2.00
One Process Roving on a 8" x 4" frame Scroll Condenser			
60 grain	.139	18.00	2.50
60 grain	.139	22.00	3.00
60 grain	.139	25.00	3.50

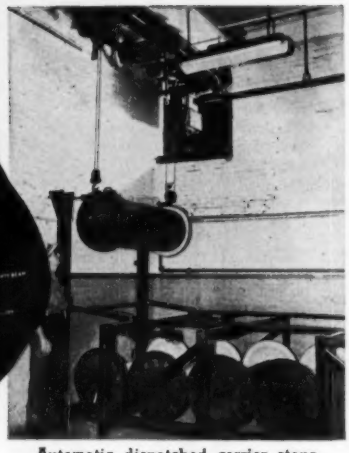


Patented H & B Scroll Condenser on H & B 5-Roll High Draft Roving System (2nd & 3rd Line Top Rolls Removed)

H&B AMERICAN MACHINE CO.

Builders of MODERN TEXTILE MACHINERY

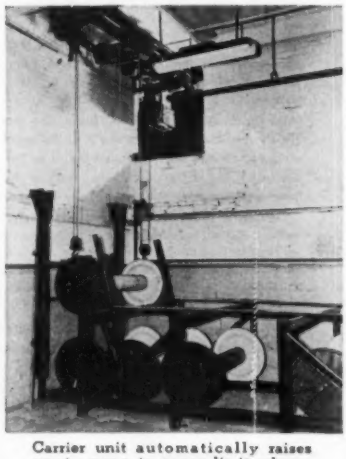
Another AMERICAN MONORAIL AUTOMATIC BEAM HANDLING INSTALLATION



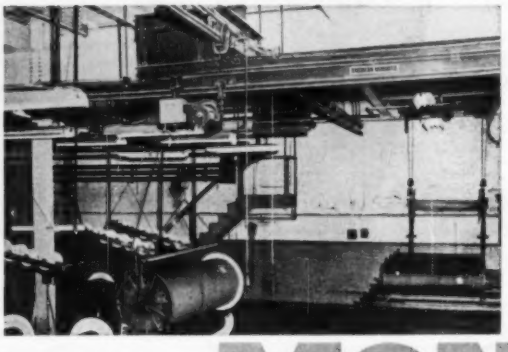
Automatic dispatched carrier stops over rack in slasher room, lowering beam which is guided into position for deposit on the upper tier of rack. Beam automatically rolls off hooks which continue down to lower tier to engage with an empty.

To eliminate hand pushing of heavy beams on dollies up and down ramps between various rooms appeared to be a very complicated and costly job. With hundreds of overhead handling installations to draw upon, American MonoRail engineers, by using a few simple innovations, installed this system. Now, full beams are automatically transferred from the warper room on one level, to the slasher room on a lower level, with return transfer of empty beams without attention after carrier is started. Savings effected will pay for the system in a suprisingly short time.

Why not put your handling problems in the hands of an American MonoRail engineer? Let him show you cost and time-saving advantages offered by American MonoRail Overhead Handling System. No obligation, of course.



Carrier unit automatically raises empty crane to upper limit whereupon the unit returns to the warper room.



Hand pushed crane with electric hoist takes beams from rack to interlocking spur track over each slasher creel.

THE AMERICAN MONORAIL COMPANY

13108 ATHENS AVENUE CLEVELAND 7, OHIO

For more information, write direct or use Reader Service post card.

from boll

to bolt

From the time cotton arrives as rawstock until it's ready for bolting, textile mills get excellent results with Santomerse No. 1, Monsanto's all-purpose detergent and wetting agent. Santomerse No. 1 is used in kier boiling, desizing, dyeing and in myriad scouring operations for cotton, wool and synthetic fibers.

In hard water, Santomerse No. 1 prevents formation of insoluble curds and film. Thus, it aids in level dyeing and helps colors retain their sparkling brilliance.

Santomerse No. 1 is a powerful detergent . . . a rapid wetter . . . a thorough penetrant . . . a free and easy rinser. It is efficient in hard or soft, hot or cold water . . . in acid or alkaline solutions. Being essentially neutral, it has practically no effect on the pH of solutions and, even if minor changes take place, the pH can be adjusted easily.

For technical counsel on any application of Santomerse No. 1 in the textile industry, or for a free copy of the booklet, "*Santomerse No. 1—The all-purpose wetting agent and detergent*," contact the nearest Monsanto Sales Office or write MONSANTO CHEMICAL COMPANY, Phosphate Division, 1700 South Second Street, St. Louis 4, Missouri.

DISTRICT SALES OFFICES: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle. In Canada, Monsanto (Canada) Ltd., Montreal.

MONSANTO DETERGENTS, PENETRANTS, WETTING AGENTS

Anionic	Nonionic
Santomerse* No. 1	Sterox* SE
Santomerse S	Sterox SK
Santomerse 30X	Sterox No. 5
Santomerse No. 3	Sterox No. 6
Santomerse No. 3 Paste	Sterox CD
Santomerse D	

*Reg. U. S. Pat. Off.

MONSANTO
CHEMICALS — PLASTICS

SERVING INDUSTRY . . . WHICH SERVES MANKIND

want unusual performance like this?

Switch to performance-proved

CRANE VALVES

CASE HISTORY FROM CRANE FILES

PROBLEM: To eliminate the all-too-frequent and costly replacement of valves on phosphoric acid lines in a pharmaceutical process.

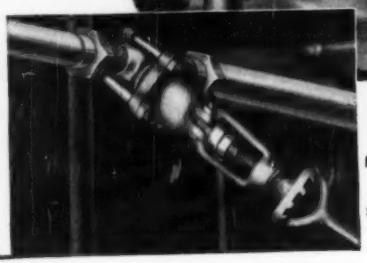
WORKING CONDITIONS: Valve required to precisely throttle 50% phosphoric acid flow at the rate of ½ gal. per minute. Valve operated steadily for 8 hours each day, then closed with acid in line for remaining 16 hours.

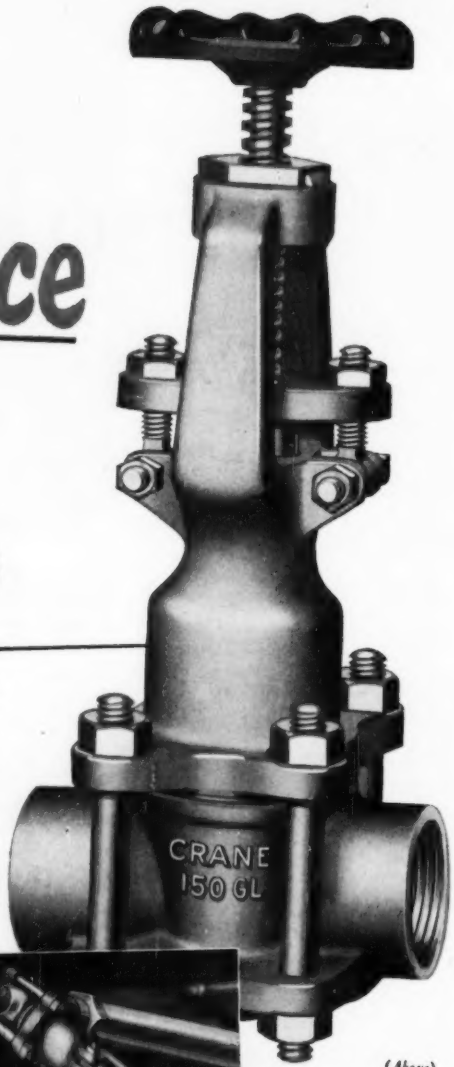
SOLUTION: Crane No. 18850 18-8 Mo Stainless Steel Plug Gate Valve.

RESULT: After more than 30 months' service, Crane Plug Gate showed no wear or indication of damage from etching, and continues to perform at full efficiency. Only maintenance is periodic repacking essential to such acid service. User reports that several other valves were tried, but none approached the performance of the Crane No. 18850 Plug Gate for long life and accurate flow regulation.

A typical example of the long life and low-cost maintenance that make Crane Quality the best value in all types of valves. That's why... **More CRANE VALVES are used than any other make.**

(Right) Photo of subject installation





(Above)
No. 18850 Crane 18-8 Mo Plug Gate Valve for throttling or shut-off service (No. 17750 in Monel) Send for new folder AD1855

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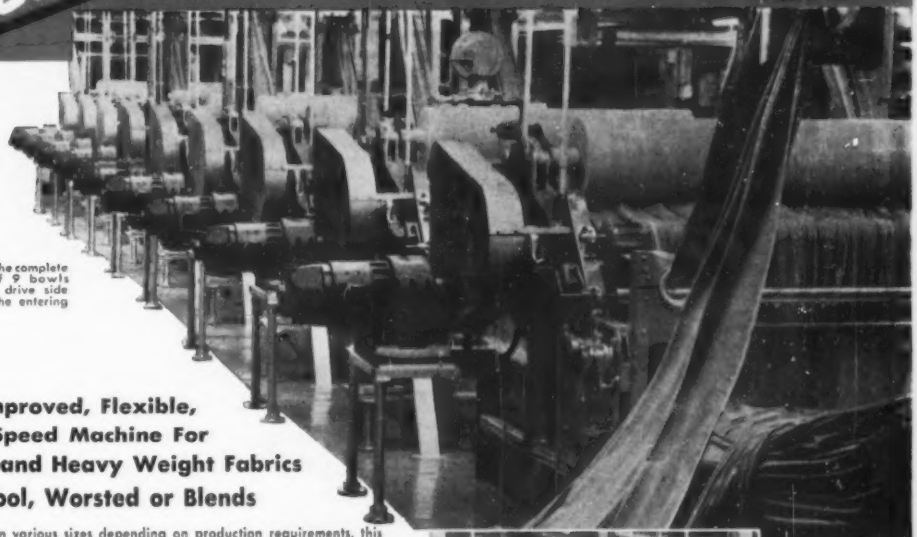

Showing the complete range of 9 bowls from the drive side and on the entering end.

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5. Each unit is kept in step by tensionless compensators. Cloth is tensionless throughout entire range.
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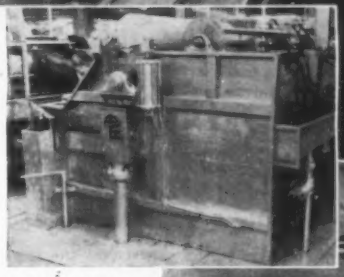
7. Provision can be made for flow of liquor to stop automatically when machine stops, effecting increased hot water savings.
8. Cloth fully protected against damage by electric stop motions.



Individual tub feed line of back water box and flexible hose through which water is pumped from weir compartment to next machine.

Looking down into stainless steel suds box. Perforated plate is adjustable weir to regulate depth of water in tub.

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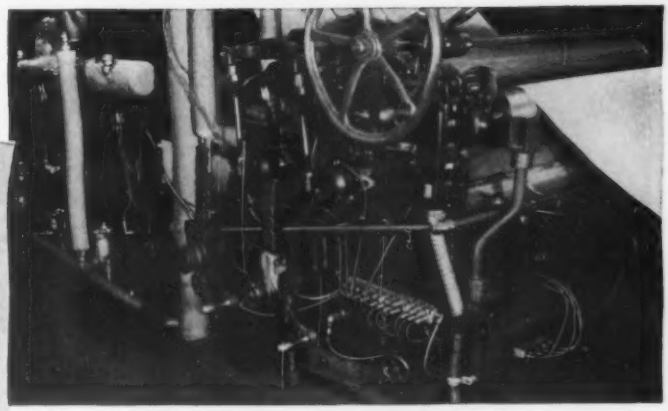
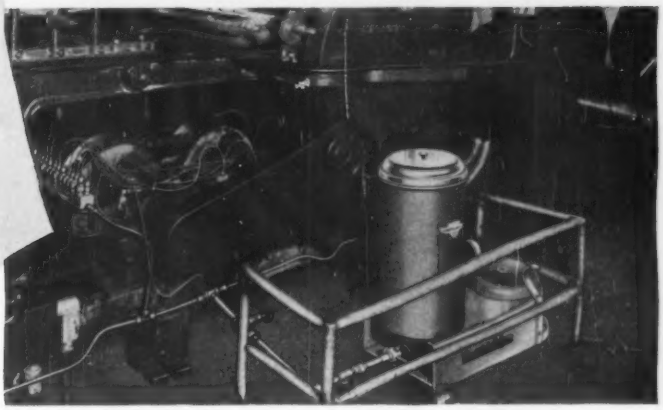
Saves 4½ Hours Overtime a Week For Leading South Carolina Mill



Lincoln Centralized Lubrication System as installed on Cocker Slashers



The installation of Lincoln Centralized Lubrication on the slashers in one of the south's leading textile mills has resulted in considerable savings to the mill in both labor and grease costs. Each slasher has over 150 lubricating points, and when lubricated by hand, required considerable time, plus the loss of excess grease.

Lubrication time has been cut from 4½ hours per week to 1½ minutes and the loss of lubricant has been entirely eliminated. Lincoln Centralized lubrication applies the right Lubricant, in the right quantity at the right time, providing longer service life for the machine without repairs. Savings effected have paid for the cost of the installation many times.

Lincoln Centralized Lubrication Systems have been installed on a wide variety of textile machinery, both old and new, in leading mills. Actual case histories prove remarkable savings.

Lincoln's lubrication system specialists will work with you and recommend the time and money saving Centralized Lubrication System best suited to your equipment. Write for name of your nearby Lincoln Distributor.

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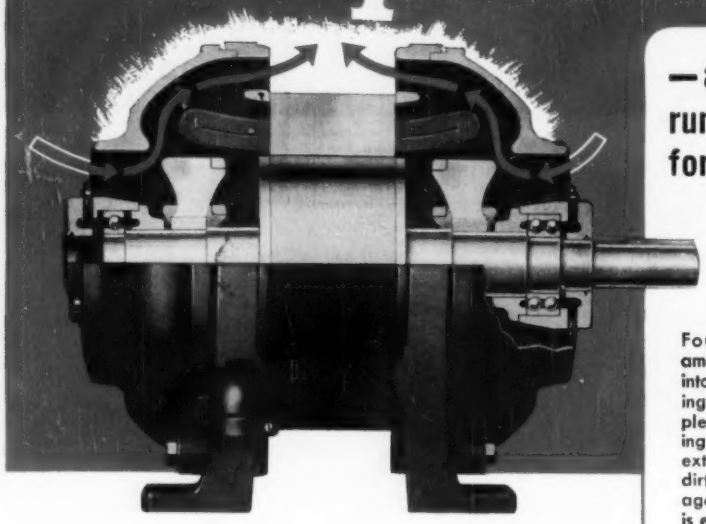


—and you can run these motors for years,
then easily relubricate them!

Four times the ordinary amount of grease is packed into the large reservoir. Bearings and grease are completely sealed in a cast housing with long running seals for extra protection against lint, dirt, dust and lubricant leakage. Eventually, relubrication is essential to lengthen bearing life—and this is easily done with a grease gun, without removing end shields or otherwise causing a production break.

On spinning frames, roving frames, pickers, etc., you can't beat the General Electric screenless open textile motor for downright dependability. Designed for lint-laden surroundings, it's built to prevent lint and dust from accumulating inside the motor.

HERE'S HOW! Through oversize inlets in each end shield, cooling air is pulled in by smooth surfaced fans, swept freely through large streamlined air passages, and blown out through big discharge openings directly over the laminations. Lint just can't hide anywhere inside.

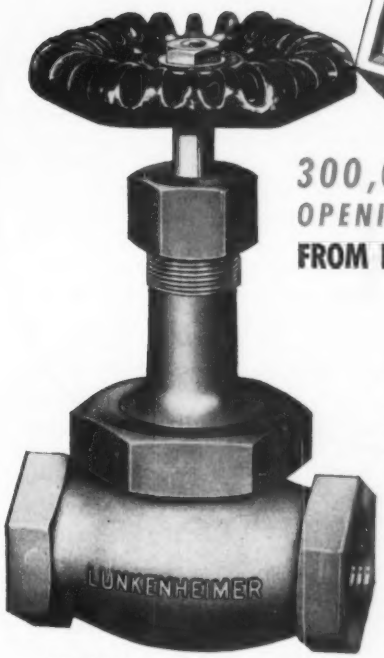
Next time you need screenless open textile motors, call in your local G-E textile-mill specialist. Meanwhile, send for Bulletin GEA-1557 describing these motors in detail. *Apparatus Department, General Electric Company, Schenectady 5, N. Y.*

SCREENLESS OPEN TEXTILE MOTORS

654-15

GENERAL ELECTRIC

amazing
bronze stem gives
years of extra service



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Unbelievable? Perhaps, but Lunkenheimer's amazing new bronze stem metal has actually been tested at more than 300,000 openings and closings—the equivalent of years and years of rigorous service. Wear-test machines, carefully controlling torque and number of turns, have registered more than 300,000 cycles in the continuing tests—with live steam flowing through the valves. This stem has also been exhaustively tested under severe field conditions. Literally millions of stems have been placed in service, and not one has ever been returned due to wear failure. The remarkable stem metal, which has revolutionized all prior conceptions of valve stem life, is called Stemalloy*. It is a special-purpose bronze developed exclusively by Lunkenheimer, and is not commercially available. *Only Lunkenheimer valves* have the Stemalloy* stems. Ask your leading industrial distributor for information on the *complete* Lunkenheimer bronze valve line, or write The Lunkenheimer Co., Box 360R, Cincinnati 14, Ohio.

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The new "Reading" Machines are producing full-fashioned stockings of superior quality and at higher speeds than ever before possible. Many exclusive "Reading" features give higher precision in operation and greatly simplified control . . . 30 sections . . . 51 and 60 gauge.
TEXTILE MACHINE WORKS • READING, PENNA.

The "READING"
Full-Fashioned Knitting Machine

America's Road to Victory

. . . Let's Increase Production

This is the time to speak out—now—at the beginning.

Our industrial program for re-armament is getting off on the wrong foot.

The talking and writing about it emphasize the wrong things.

Its headline words are "cuts" and "controls."

Those words make bad propaganda for the cold war.

"Cuts" and "controls" are no words to challenge the imagination and energy of our own people. They won't impress the masters of the Kremlin. And they can only make it appear to the rest of the world that America thinks it can defend the free way of life by abandoning it.

America stands as the world's champion against aggression because America has become the most powerful free nation in the world.

How did we get that way?

Not by putting ceilings on wages; not by rationing or clamping iron-clad government controls all over business and industry.

To be sure, some temporary controls are necessary to channel very scarce materials speedily to use for defense. So, too, are special taxes and credit restrictions needed to combat inflation. But they will be fatal if they blind us to this fact:

We became the strongest nation in the world by out-producing every other nation.

Production—The Final Answer

Next year our government is planning at least a $40 billion military program. Instead of planning only on controls to divert $40 billion of production from the making of civilian goods to the making of military supplies, we should be figuring out also ways to push up total production.

Of course, our industrial plant is running at close to "capacity" now. And our labor force has reached almost full employment. There isn't much slack to be taken up.

Can even the United States add a $40 billion miracle of production on top of what it is already doing?

Our answer is "Yes"—and within two years. It can be done by adding about $6 billion each year to our program of capital investment which now runs about $22 billion a year.

Part of this added production will come from expanding our industries. The steel companies, for example, already have plans to increase their capacity almost ten per cent in the next two years.

But by far the largest part of that $40 billion of added production must come from higher productivity—raising industry's efficiency.

continued on next page

To meet our goals we need to raise our productivity five per cent a year.

Can it be done?

The answer is an emphatic "Yes."

Raise Industry's Productivity

McGraw-Hill's studies of industry's equipment show that there are countless opportunities for improving efficiency. Our manufacturing industries alone need at least $35 billion of new equipment to raise their facilities to first class technical standards.

Here are some of the broad possibilities reported by the trained editors of McGraw-Hill's business magazines:

In many manufacturing plants as much as 40 per cent of workers' time goes into moving materials and parts—shifting things about within the plant between processes and to and from shipping platforms.

FACTORY estimates that improved materials handling equipment and methods might well cut handling costs twenty-five per cent and save annually over 650,000 man-years of unnecessary labor.

Modern machine tools designed since World War II are 40 per cent more productive, on the average, than is old equipment. But AMERICAN MACHINIST surveys show that 95 per cent of industry's machine tools are of designs at least ten years old. Replacing them could raise productivity of the metalworking industries at least ten per cent—enough to absorb a major share of the metalworking industries' part of the defense program as now planned.

In coal mining, latest equipment and methods can raise productivity sharply. The editors of COAL AGE estimate that production of bituminous coal could be raised from seven tons per man-shift to ten within three to five years.

Many new textile production techniques are 50 per cent to 75 per cent more efficient than those in use now. If plants could be fully modernized, and full use made of latest management methods, TEXTILE WORLD estimates that output-per-manhour would rise 20 per cent. *A FOOD INDUSTRIES study indicates that modern equipment plus the best management techniques could raise productivity in food processing at least 20 per cent.*

These are just some of the opportunities that industry can seize and by which the nation can profit.

A Nation-Wide Effort

Of course, industry itself can't do the whole job. Labor, government and all the rest of us must cooperate.

Government's part is to see that its emergency controls are so applied that they will increase productivity and thus make possible an early lifting of such controls.

Labor's part is to help in the development of labor-saving methods and machinery and to welcome their adoption as the only sure way of continuing to advance the American standard of living while maintaining the American free way of life.

For all of us the job is to work constantly for an expanding, ever-stronger America with constantly growing productivity; not a pinched and shackled America cooped up under wage and price ceilings and tied to a ration card.

Challenge to Industry

Here is a sharp challenge to industry to study the best work-methods that are being reported—to use every minute and every dollar it can to replace obsolete equipment.

Here is a sharp challenge to government to do everything within its power to make its control policies and its fiscal policies strengthen the incentives to industrial modernization—to demand sacrifice for a purpose and not for effect.

The job to which such opportunities point will take time—though nothing holds back adoption of some of the simpler improvements in work-methods reported in business magazines all the time.

But increasing production is our one best hope that we may be spared the full array of price, wage and production controls now and be freed eventually from all controls.

General Omar Bradley has said that the protection of our national independence calls for "long-range commitments that we are willing to carry out."

A long-range commitment to fight this battle for peace with America's most powerful weapon—industrial productivity—is the surest guarantee of victory for the free world.

Let's make that commitment—now—at the beginning.

McGraw-Hill Publishing Co., Inc.

QUALITY OF THE FINISHED FABRIC is the chief concern of the quality-control men at Pilot Mills, Raleigh, N. C. In this picture, Mamie Poole, an inspector, shows a defect to W. M. Richardson, overseer of the cloth room. If a particular defect shows up frequently, quality control will be notified.

How About Quality Control For SMALL MILLS?

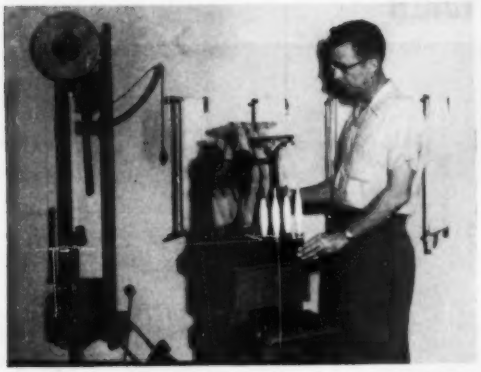
► Here's a comparatively small mill with a complete quality-control program. Since the program was started a little over a year ago, yarn variation has been greatly reduced; and seconds caused by uneven yarn have been cut down.

By W. A. THOMASON, JR., *Southern Editor, TEXTILE WORLD*

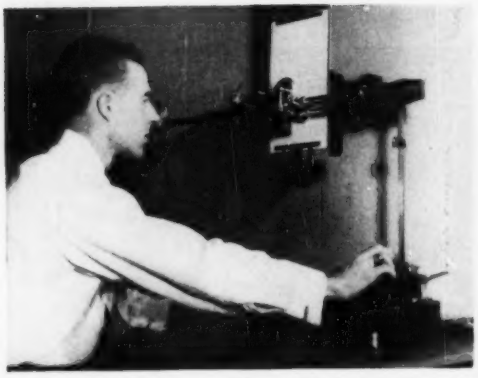
PILOT MILLS CO., Raleigh, N. C., has shown what quality control can mean to a small mill. Pilot has about 14,000 spindles and 408 looms, and does its own dyeing and finishing. The quality of the carded ginghams and shirtings and the combed ginghams made here has been im-

PILOT MAINTAINS standard testing conditions with a Chrysler Airtemp air-conditioning unit, modified to include humidification. Checking the chart on the Brown recorder is Asst. Mgr. Sam Riley. These units are being used effectively in many labs.

THE HEART OF THE LAB is this Uster evenness tester with integrator. Asst. Supt. Worth Kirkman (right), who set up the quality-control program at Pilot, uses the Uster to get the best machinery settings and speeds, locate source of defects, and evaluate new equipment.



ROUTINE YARN-STRENGTH TESTS are made on the Scott skein tester. After he winds the skeins, Lab Technician B. H. Barbour will put them on the special skein racks in the background for conditioning overnight before he makes his tests.



SINGLE-STRAND TESTS are made on the IP-2 in research work. Worth Kirkman feels that single-strand breaks, together with results of evenness testing, give the most accurate picture of the effect of uniformity on strength.

NEPS ARE CONTROLLED by cooperation between quality control and the overseers. Worth Kirkman points out the nep count to Overseer Blackman. Worth can find them, but they have to work together to reduce them.

WORN PARTS, bad rolls, and gears not in proper mesh cause many defects. This draw frame was making uneven sliver until Overseer Blackman and Master Mechanic C. H. Johnson, Jr., found a worn gear bearing.

Here's How the Program Works...

▶ Worth Kirkman, as assistant superintendent, supervises the quality-control operations. B. H. Barbour, lab technician, does the physical testing. Pilot does not have a large staff in its quality-control department—these two men are "it."

These quality-control men have as their major objective the improvement of quality without increasing cost or reducing production. Here's what they have done so far.

In the words of Asst. Mgr. Sam Riley, "We now have practically no rejects in fabric because of uneven yarn. Our lab has made it possible for us to make improvements in each step of yarn processing."

The increase in uniformity of yarn was the result of considerable research and testing. Worn spindles were replaced; distribution of drafts in spinning, roving, and drawing were changed; roll settings were studied and in several cases changed; rolls were replaced; top-roll bearings in drawing were replaced and some gears.

Every bit of this work required close cooperation between Kirkman, the overseers, and the master mechanic. Of course, they had the backing and support of the mill manager, C. S. Tatum.

The laboratory equipment used by Pilot Mills to do the needed testing includes the following machines: Uster evenness tester, Scott skein-strength tester, Suter yarn balance, and IP-2 single-strand strength tester.

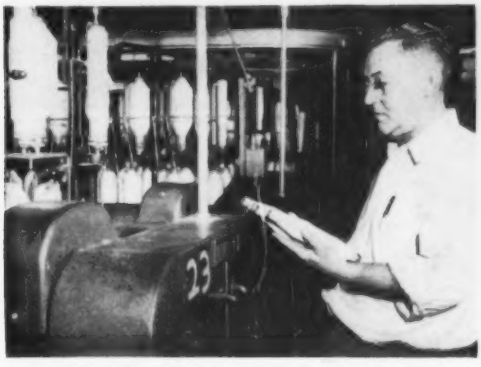
A Chrysler Airtemp air-conditioning unit, modified to add humidification, gives the lab standard atmospheric conditions. A Minneapolis-Honeywell controller with Brown recorder maintains conditions of 70° F. ±2° and 65% r.h. ±2%.

In the mill proper, such equipment as a Saco-Lowell lap tester, grain scales, a sliver template, a roving reel, and a Strobatac are used in testing.

The Strobatac has proved very valuable. It is used to determine the proper sizes of traveler to use, to set winders at the same speed, and to check speeds and conditions of spinning spindles.

***SLIVER AND ROVING SIZE** is checked each shift by the card room overseer. Here, Overseer H. J. Blackman is checking the sliver size. He needs only grain scales, a sliver template, and a roving reel to do his routine testing.*

***THE OVERSEERS** at Pilot are quality-conscious. Overseer Blackman helps keep the quality of his picker and card rooms up by making frequent checks—like the picker-lap size and uniformity tests he is making.*



***GETTING REPRESENTATIVE SAMPLES** for testing is a major function of overseers in controlling quality. Overseer L. J. Lassiter has his doffers get five bobbins from five different frames every day. In this way, bobbins from each frame are tested each week.*

***PATTERNS ARE CHECKED** often by the weave-room overseers. They make a template for each of the plaid and check fabrics, so that they can make tests quickly. Wrong draws and other weaving defects are therefore located before they cause many seconds.*

Here's How the Overseers Fit In...

▶ The overseers are the backbone of this quality-control program. They do the daily routine testing. The picker- and card-room overseer checks his picker laps for size at regular intervals. He checks the size of roving and sliver every shift. All yarn is tested in the lab, but the overseer of spinning helps by getting representative samples for the lab. The weave-room and cloth-room overseers keep a close check on the fabrics.

In fact, the yarn sampling has been so good that the lab is getting results with small sample lots of five bobbins from five frames each day as good as it used to get when 20 bobbins from each frame were used as samples.

In a small mill such as this one, the expense of special personnel to do the testing work that the overseers do here would be prohibitive. If the overseers are sold on quality control, as they are at Pilot, they can make such a program a booming success.

At Pilot, when Worth Kirkman finds a defect which he can trace to a particular machine or department, he discusses it with the overseer; and the defect is soon corrected, because the overseer is as interested in correcting the defect as Kirkman is.

proved noticeably since the program was started about a year and a half ago—particularly, seconds are down and yarn evenness is up.

The quality-control set-up at Pilot is not elaborate. Asst. Supt. Worth Kirkman heads the program and supervises the lab. The testing lab has equipment for checking uniformity of stock in process, yarn and fabric strength, and size of stock. An important factor in the success of quality control at Pilot is the enthusiasm of the overseers. They do a lot of the routine testing; and when defects are found, they pitch right in to help correct them and make the program a success.

STOP LOOM STOPS
In Warp Preparation . . .

PREVENTIVE LOOMFIXING saves time and costly repairs. Fixer is tightening clutch box before it has chance to wear shaft.

"A warp well dressed is half-woven" is a saying that's assuming increasing importance these days—for mill men are learning that preparation departments can help raise efficiency by working for the weave room as well as for themselves.

By EUGENE P. SCHREMP, *Consulting Editor, TEXTILE WORLD*

MORE AND MORE MILL MEN are learning that the best way to increase loom production and efficiency is to prevent loom stoppages by good preparation of warps and filling. Preparation departments today should work for the weave room. Even the weave room can help itself by proper planning, preventive fixing, and preassembly of parts for unit replacement.

Here are a few tips on ways to stop loom stoppages before they have a chance to start:

By Tying Good Knots

From spinning down to warping a proper knot should be tied. A knot that slips or has a long tail may tangle up and break out a number of ends.

By Sizing Some Warps

Sizing will sometimes increase production on certain kinds of worsted, such as single warp yarn and low-grade hairy stock. Hard-weaving fabrics which have a tendency to make knots slip are helped by sizing. The wet size causes the knot to shrink, and the size acts as a glue which prevents the knot from slipping. In some cases, production on an 18-oz. government serge has been increased through sizing by as much as 10 to 15%.

By Dropping Wires Before the Loom

When drop wires are dropped after the warp is placed in the loom, con-

siderable time may be lost. Not only is the actual time that it takes to drop the wires lost, but there is usually considerable time lost in waiting for drop-wire operators. And ordinarily, warps do not come out evenly. Some days a large number of warps may come out together. On plain work it may be possible to run looms while waiting for drop wires. But there are some kind of fancy work where it is not profitable to try to run looms without wires, especially when a weaver is running six or more looms.

Dropping wires before the warp is placed in the loom is one way of saving time and increasing production. There are a number of ways of doing this. Mills which do not use a hander in the drawing-in operation may easily construct a combination frame for dropping wires and drawing in the warp. By this method, wires may be dropped while warp is being drawn in.

A number of methods are used to hold the harness frames and drop wires. Some mills use a special truck, and others use a wooden frame to hold the harness frames and drop wires. A simple T-shaped iron frame at each end of the warp beam to hold the harness is probably the simplest.

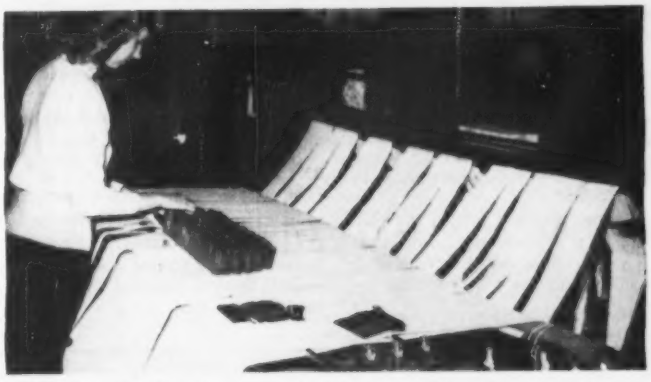
By Preparing the Loom

Preventive loomfixing is the best way to keep production high. A good loomfixer will watch his looms and make repairs and adjustments before any serious trouble occurs, and thus prevent long and costly shutdowns. Allowing a loose gear or cam to run will usually cause the shaft and keyway to wear so that the shaft and gear must finally be replaced. This replacement job may cause the loom to be stopped for a number of hours. There is also the possibility that other looms will be stopped for repairs while the fixer is working on this job. Tightening the set screws or installing a new key as soon as a gear or cam becomes loose not only saves time but also cost of damaged parts.

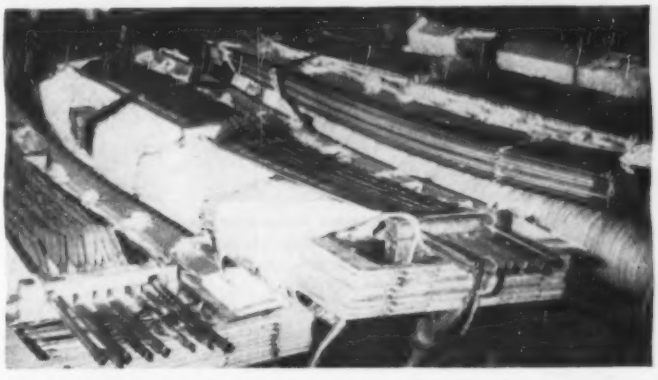
By Preparing Unit Spare Parts

Making up spare parts and having them ready for quick installation will also save time. Modern looms are made so that most parts are interchangeable. A spare upright shaft, made up complete, may easily be installed when it is necessary to change worn gears. A number of other parts can also be pre-assembled for unit replacement, such as crank arms, magazines, top and bottom harness cylinders. A good system is to have the fixer use the parts made up and then rebuild the parts taken off in his spare time. Any machine work involved can be referred to the machine shop.

GOOD KNOTS without long tails should be carefully tied in all processes from spinning to warping.



DROPPING WIRES before the warp reaches the loom can help get warps started faster.



WARPS MADE READY for looms in advance can keep weave-room production even despite any uneven flow of warps from preparation.

Here's How Alabama Men Tackle These

CARDING AND SPINNING PRACTICES were discussed at the fall meeting of the Alabama Textile Operating Executives held recently at Auburn.

Prior to the meeting, five questions on carding and five on spinning were selected from questions sent in by mills. These ten questions were mailed to all Alabama mills, and written answers were received. The same questions were discussd orally at the meeting.

Some of the questions and answers are given here in condensed form.

1. Pneumatic Rack Control

Question: *What are the advantages of the new pneumatic picker-rack control over the standard friction control?*

One mill has ten pickers equipped with the pneumatic rack controls. It reported that the rack (1) gives an even pressure on the lap at all times, (2) remains more level, and (3) increases lap yardage.

With the friction control formerly used, the 13-oz. laps were 17 in. in diameter and weighed 52 lb. The new rack cut the laps to 14 in. in diameter. When enough yards were put on to bring the lap back to 17 in., weight increased to 58½ lb. and yardage increased 8 yd.

During the two months the racks have been in operation, no disadvantages have been noted. No fluffing results during the 2 or 3 hr. the laps are stored.

Another mill gave these advantages:

1. Picker production increased 3.5% because time required to doff the picker was reduced 42%. Racks will pay for themselves in 50.5 weeks.

2. Laps are smaller. Diameter was cut from 16 in. to 14½ in.

3. Yardage was increased from 52 to 58 to bring the lap back to 16 in. in diameter—a yardage increase of 11.5%.

4. Laps run 11.5% longer on the card as a result of the 11.5% increase in lap yardage.

As an experiment, this mill ran an 80-yd. lap that weighed 69 lb.

2. Card and Drawing Maintenance

In practically all the mills, the card grinders have no duties on drawing frames. Drawing-frame maintenance, in most cases, is assigned to the fly-frame section man.

Hours between card grindings ranged from a low of 160 to a high of 504 in the 14 mills that specified their frequencies.

Pounds run between grindings ranged from 1,804 to 5,700.

The average hours between grindings was 3,864.

Other data given included:

Backs set: 22 to 66 days; average, 36.6 days.

Tops set: 13 to 66 days; average, 31.6 days.

Cards per grinder: 22 to 66; average, 45.2.

Cards ground per day per grinder: 2 to 6; average, 3.2.

Hours of grinding: 3 to 8; average, 5.7.

3. Ceiling Cleaners

These advantages and disadvantages to automatic ceiling cleaning were given by one mill:

J. W. PATTERSON, superintendent, Mount Vernon-Woodberry Mills, Tallahassee, led the discussion on carding. Spinning discussion was led by Grady Webb, assistant superintendent, Langdale Mill, West Point Mfg. Co., not shown.

GENERAL CHAIRMAN, R. B. HORSLEY, superintendent, Pepperell Mfg. Co., Opelika, confers with Secretary-Treasurer BEN H. CRAWFORD, Southeastern Engineering Co., West Point, Ga., during the carding panel.

NEW EXECUTIVE-COMMITTEE MEMBERS elected at the fall meeting of the Alabama Textile Operating Executives were J. D. Whatley, Nashua Mfg. Co., Cordova; and Homer Roberts, Anniston Mfg. Co., Anniston.

Mill Problems

1–Pneumatic picker rack control
2–Card and drawing maintenance
3–Card-room ceiling cleaners
4–Reworkable card-room waste
5–Underframe cleaners for spinning
6–Spinners and clean-off hands
7–Handling spooler tailings
8–"Wild" yarn on spoolers

Advantages.

1. Keeps lint from accumulating on the ceiling.

2. One cleaner saves $2,000 per year in labor cost.

Disadvantage: It occasionally blows down a card end as it makes a turn.

Another mill reported: "We have automatic ceiling equipment in all our card rooms. We now blow down overhead every two or three months instead of once every week. We save 1½ hr. production each week and the cost of blowing down. In this way we get a return of 15% on our investment in the ceiling cleaners. We think that quality is improved, and we see no disadvantage to using the cleaners."

A third mill reported: "We installed ceiling cleaning in 1947 and paid for the investment in two years by the saving on week-end blowing down. We blow down every eight weeks. The overhead is always cleaner now. No lint accumulates overhead."

4. Reworkable Waste

Control of reworkable waste follows a general pattern in most of the mills. In most cases, the waste made by each operator is weighed separately and a record of his waste is kept. Supervisors use this record as a guide in trying to hold waste to a reasonable amount.

One mill reported: "Each operator's waste is weighed separately at the end of each shift, and the weight is posted on a bulletin board in each room. Standard waste weights for each job are posted with the actual waste weights. If the actual weight is higher than the standard, the actual is posted in red."

Another mill reported: "The waste record of each employee is turned over to the overseer each day and is copied on a weekly report form. At the end of each week the total reworkable waste is added and the percent of production of each is found. These percentages are entered on a chart by the overseer."

Another mill reported: "Two factors spark our waste-control program: employee training and job upkeep.

"From pickers through roving frames, we show employees what we think is the proper method of handling stock at each process. We also give each one the cost of waste per pound to show him just how much loss his waste can cause and how it might affect the security of his job.

"Section men act as supervisors to control waste."

Among eleven mills reporting, waste percentages were:

Card lap–1.00 to 2.00%; average, 1.15%

Card front–0.11 to 1.50%; average, 0.50%

Drawing–0.25 to 1.00%; average, 0.45%

Slubber–0.20 to 1.01%; average, 0.38%.

5. Underframe Cleaners

One mill reported: "The four underframe cleaners we have are an experimental installation. The manufacturer still makes all repairs because the cleaners are not mechanically ready yet.

"They are doing a good job. Ends down have been reduced from 31.48 to 29.17 per 1,000 spindle hr. Gouts and big ends have been reduced from 3.299% to 2.108%. Slubs in finished cloth have been reduced 26.09%."

Another mill reported: "We do not notice any difference in ends down, but we think that slubs will be reduced."

A third mill reported: "We have been running six automatic underframe cleaners on warp spinning for several months. In a number of tests, ends down have averaged one-third less than on adjacent frames on the same yarn number where the cleaners are not used.

"The reduced ends down are due largely to less lint on travelers and less flying lint.

"Cloth made from the yarn has fewer gouts, and the over-all appearance of the cloth is better."

6. Spinning and Cleaning

In most mills, spinners' jobs include only a minor part of the cleaning done on spinning frames. Of 13 mills reporting, only two have their spinners do a major portion of cleaning. The other eleven mills assign most of the cleaning, particularly roll picking, to special clean-off hands.

One mill reported: "Our filling spinners run 10 to 12 sides of 4s to 15s yarn, and our warp spinners run 12 to 20 sides of 10s to 29s. Their duties are to piece up ends, creel in roving, run out thread guides, clean scavenger rolls, and knock out travelers.

"Clean-off hands have 33 to 38 frames each, depending on the number of spindles per frame. Five clean-off hands on each of the three shifts do one-third of the cleaning on each spinner's job.

"Cleaners wipe the middle and bottom roving boards, roving rods, cap bars, traverses, guides, back sides, roller beams, roll stands, and scavenger weights; brush the base and spindle rails; pick top cleaners, front-roll stands, and head-end stands (with roll hooks), and rolls, stirrups, aprons, etc., with mechanical roll pickers."

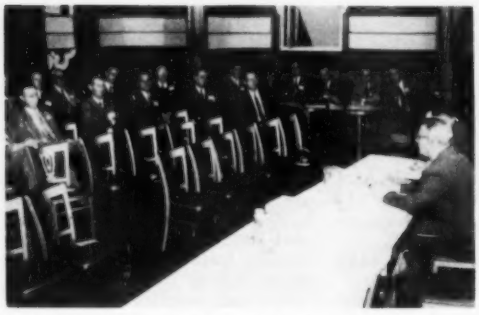
Another mill divides cleaning between spinners, steel-roll cleaners, and roll pickers. The duties of each are as follow:

Spinners: Run twelve sides or 10s yarn, wipe the back sides once a day, run out the front sides every hour,

(Continued on page 226)

OVER-ALL PLANNING and policy setting for Committee D-13, ASTM, are done by the officers. Left to right they are: Giles E. Hopkins, Wool Bureau, Inc.; Richard T. Kropf, Belding Heminway Co.; S. J. Hayes, Ludlow Mfg. & Sales Co.; Frederic Bonnet, American Viscose Corp.; Herbert J. Ball, Lowell Textile Institute; past chairman, Committee D-13, Paul Smith, ASTM; Arthur G. Scroggie, E. I. du Pont de Nemours & Co.; William D. Appel, National Bureau of Standards, chairman, Committee D-13; W. H. Whitcomb, secretary, Committee D-13, and Julian S. Jacobs, Textile Research Institute.

OVER 200 TEXTILE SCIENTISTS and manufacturers registered for the 1950 meeting. W. H. Whitcomb, secretary of the committee since 1930, and Mrs. Whitcomb are shown handling registration. Others, left to right, are Louis C. Barail, U. S. Testing Co.; Giles E. Hopkins, Wool Bureau, Inc.; Robert H. Brown, Parks-Cramer Co.; and Elliot B. Grover, School of Textiles, N. C. State College. Committee D-13 is the largest committee in ASTM, and has 355 members representing all branches of the textile industry, the government, and educational institutions.



RESULTS OF LETTER BALLOTING of subcommittee on tentative methods of testing and tolerances for cotton and rayon tire cord are discussed by Subcommittee A-9 on tire cord and fabrics. The discussion is led by F. C. Kennedy, U. S. Rubber Co., chairman of the subcommittee. On his right at the table is C. O. Werner, American Viscose Corp., secretary.

NEW SUBCOMMITTEES are formed as the need for them arises. Prof. H. J. Ball (right), Lowell Textile Institute, past chairman of committee D-13 for 20 years, is speaking at the organization meeting of subcommittee A-7 on ultimate-consumer textile products, which was formed this year. Chairman of the subcommittee is A. Frank Tesi (center), Celanese Corp.; secretary is E. Ditton (left), Gotham Hosiery.

D-13

The Men Who Set The Standards

TWICE A YEAR, a group of quiet men gather together to discuss and agree upon the standards on which this textile industry operates. Between their meetings, work on standards is carried on in laboratories of textile mills, textile schools, textile distributors, and government—work based on decisions made at the meetings and work which will be the basis for presentation of new ideas for standards at future meetings.

These men make up Committee D-13 of the American Society for Testing Materials—men who volunteer their time and energy to keep this industry moving forward on a high plane. For where, indeed, would the industry be without standards? Every day, mill men work with standards set up by D-13—standard atmospheric conditions, standards of yarn appearance, standards for testing yarn and fabric properties, standards for identification of fibers, and many other standards which govern processing methods.

The photographs on these pages were taken at the most recent meeting of the committee. They show only a

THE ADVISORY COMMITTEE, an administrative and policy-setting group, is made up of the officers of D-13 and the chairmen of the subcommittees. This meeting of the advisory committee is being conducted by Chairman Appel (right) and Secretary Whitcomb (left). Committee D-13 has 23 subcommittees, each of which covers a different fiber or committee function. Some subcommittees cover so broad a field that the subcommittee has subsections to deal with a particular field. Subcommittee A-1 on cotton, for example, has six such sections.

SUBCOMMITTEES of the over-all D-13 committee are set up to deal with various fibers, test methods, nomenclature, sampling and presentation of data, membership, publicity, etc. Here, Section I, Subcommittee A-3 on wool, is discussing sampling of packaged wools by core-boring. At the table are (left) Oliver P. Beckwith, Alexander Smith & Sons Carpet Co., chairman of the section; and (right) Herbert Haller, Forstmann Woolen Co., secretary. This subcommittee has worked on such standards as the present tentative method for core sampling of wool bales.

ONE OF THE LARGEST subcommittees is B-1 on test methods. Walter M. Scott, Bureau of Agricultural and Industrial Chemistry, USDA, is chairman of this group; and Herbert A. Ehrman, Dept. of Commerce, is secretary. In this picture, C. R. Stock, American Cyanamid Co., is giving a talk on application of the specific-gravity gradient columns to the detection of additives in textiles.

TASK GROUPS set up specific projects to be discussed by the subcommittees, and investigate possibilities of suggested standards. This task group of subcommittee A-1 is discussing fineness and interlaboratory cotton-fiber check tests, prior to the meeting of the subcommittee. Group is made up of prominent industry, government laboratory, and textile-school representatives.

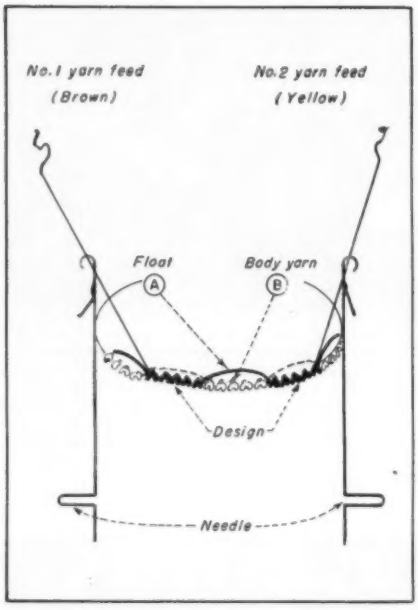
few of its members, and only a small part of its activities. But they do show a typical cross section of both members and activities, and show something of the scope and organization of the activities of the group—the men who set the standards.

Committee D-13 on Textile Materials of the ASTM was founded in 1914 and had a handful of members. Today it is the largest committee of the ASTM, with 355 members and 23 sub-committees.

The job that D-13 does is to set up standard specifications, test methods, definitions for identification and evaluation of textile raw materials, products, and finishes. The latest book of standards, *ASTM Standards on Textile Materials*, prepared by Committee D-13, has 90 specifications, test methods, and tolerances in its 586 pages. Of the standards, 22 cover cotton; 9 rayon and silk, 13 wool, 8 asbestos, 6 glass, and 5 cover bast and leaf fibers. The balance of the standards are general testing methods. Some of these cover testing machines; definitions of terms; fire-retardant properties; air-permeability of fabrics; inter-laboratory testing; resistance to water; quantitative analysis of fiber mixtures; determining small amounts of copper, manganese, and nickel; determining relative humidity; stretch of hosiery; and many more.

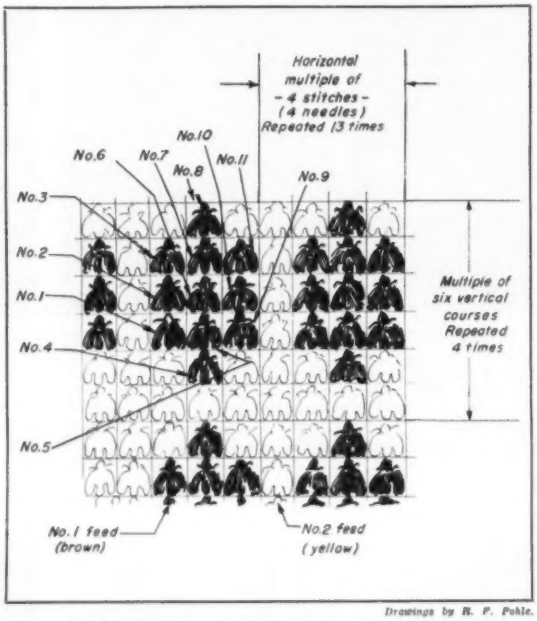
Standards are usually born of necessity. They usually start with a suggestion from someone in the committee or in the industry that a standard test method of specification be set up for a particular material. The suggestion is put to the sub-committee concerned, and if sufficient interest develops, it is usually referred to a task group for investigation and discussion. If the task group's suggested standard is apparently sound, the sponsoring subcommittee votes to submit the "proposed tentative" to the sub-committee for a letter-ballot. A letter-ballot is sent to active members of the group for approval for recommendation to D-13. To be approved, at least 50% of active sub-committee members must return ballots, and of those voting yes or no, at least 80% must be affirmative.

(Continued on page 121)



A YARN FLOAT is made when a needle is not raised by the raising cam into a position to engage a feed yarn. The yarn floats until it is picked up by the next raised needle. The number of stitches floated over by the yarn is controlled by the trick wheel raising or not raising the cams.

As shown here, feed No. 1 knits design stitches into the face of the fabric at regular intervals and floats when feed No. 2, the body yarn, is knitting.



Drawings by R. P. Pohle.

MULTIPLES OF STITCHES, both horizontal and vertical, required to knit one glove-design repeat are shown here. The body yarn, yellow, is led from feed No. 2. The design consists of repeats of eleven stitches of brown design yarn from feed No. 1.

In this pattern, the six vertical courses will be repeated four times—a total of 24 courses. The four horizontal stitches will be repeated 13 times—a total of 52 stitches (the capacity of the cylinder). Other possible horizontal-stitch designs for this size cylinder might be 2, 4, and 26.

KNITTED GLOVE DESIGNS
Are Made by Simple Repeats

HIGHLIGHTS: *Pattern yarn and body yarn alternate in knitting and floating—Presser butts in trick wheels control vertical pattern repeats—Separate group of butts needed to control plain knitting for inserting thumb thread.*

By ALBERT M. YOUNG, JR.

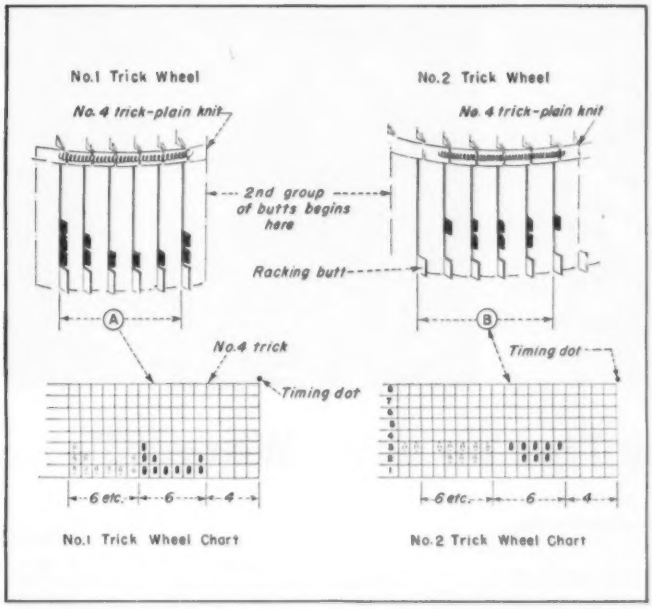
DESIGNS ARE PRODUCED on a glove machine by bringing the yarn in and out of action to cause floats. The floats are controlled to make the design pattern desired. The accompanying sketches illustrate the principles of applying a design to a glove knitted on a model T.W.S. machine, made by H. Brinton Co., Philadelphia, Pa.

The first factor to be considered in laying out a design pattern is the limits of the cylinder. For the purposes of this article, a 52-needle cylinder will be used. Designs to be made on this cylinder must be selected so that they will use a group of needles that will equally divide into 52—as 2, 4, 13, 26.

The second factor is the vertical limits of the design. The number of courses in the design-section must be determined. The best way to fix the number of courses available for the design is to determine first the total number of courses to be knitted, and then subtract the courses required for the cuff, no knit, all knit, and non-raveling edge.

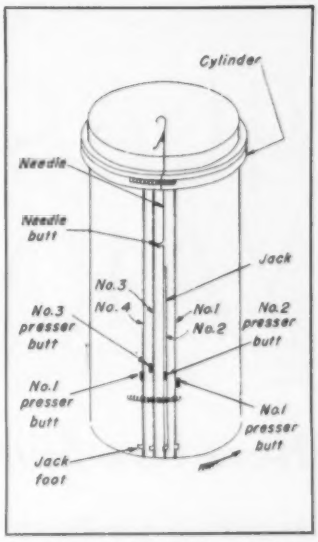
With the available vertical courses determined, the designer should check the number of courses needed by the desired pattern. These two course numbers must be brought into agreement.

The next step is to analyze the design by multiples. A complex glove design is composed of simple multiples of repeating floats. To copy a design it is necessary only to determine the simple multiples and cast them geometrically according to the colors to be used.



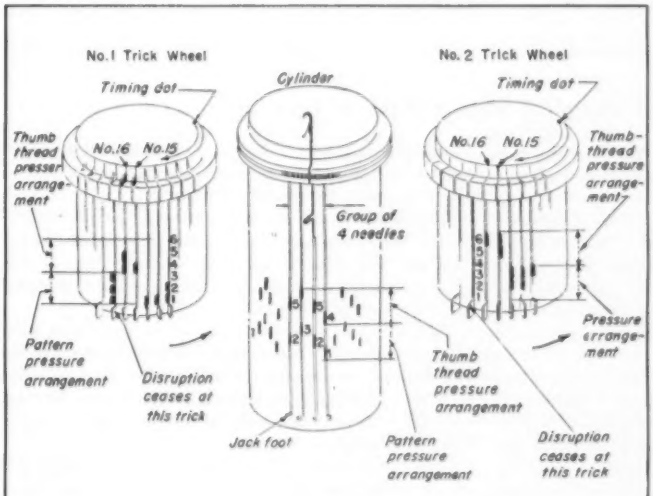
EACH VERTICAL MULTIPLE *of the design pattern requires a group of six tricks in the trick wheel. Only the three lower butts are used. Four courses of plain knitting are begun at the cuff and are followed by the first vertical multiple of six courses.*

The four plain-knit courses use five slots in the trick wheels, and the 24 courses of pattern knitting take up 24 slots. One slot is fitted with a plain trick to idle until the requirements of the finger fringe, raveling yarn, and cutting thread are met.



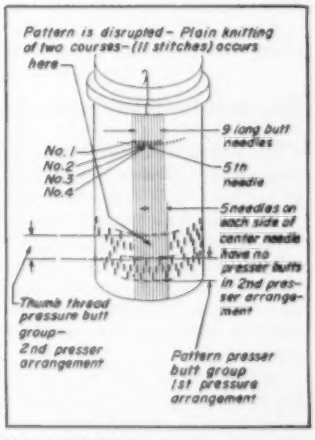
A HORIZONTAL MULTIPLE *consists of four stitches. Four needles served by four pressers are needed for each of the 13 horizontal multiples. These pressers will also use only the three lower butts of the tricks in the trick-wheel slots.*

No. 1 needle is served by a No. 1 presser butt, No. 2 needle by a No. 2 butt, No. 3 needle by a No. 3 butt, and No. 4 needle by a No. 2 butt.



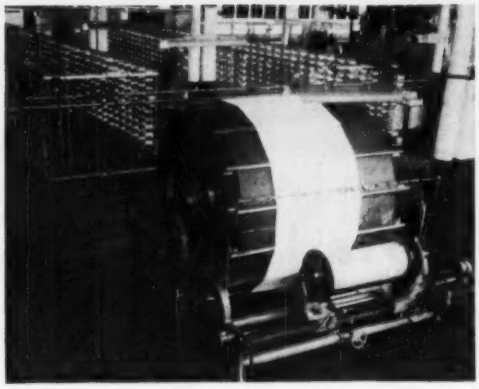
THE THUMB THREAD *is inserted at the point desired by means of additional butts placed on certain tricks in both trick wheels. These presser butts must not interfere with the pattern butts; therefore, they are placed in positions 4, 5, and 6.*

The trick-wheel slots into which they are placed must be determined by calculation. The thumb thread for this pattern is to be 1¾ in. from the cuff. The yarn used knits nine courses per inch. Slots 15 and 16 are the proper locations for the thread.


Pattern is disrupted– Plain knitting of two courses–(11 stitches) occurs here
9 long butt needles
No. 1
No. 2
No. 3
No. 4
5th needle
5 needles on each side of center needle have no presser butts in 2nd presser arrangement
Thumb thread pressure butt group– 2nd presser arrangement
Pattern presser butt group 1st pressure arrangement

PLAIN KNITTING *must take place during two courses while the thumb thread is being inserted. Nine long-butt needles are placed in the cylinder at the point where plain knitting must occur. The center needle, No. 5 here, and five needles on each side of it must not have butts at Nos. 4, 5, and 6 presser-butt locations. The butts of these eleven needles should be at the Nos. 1, 2, and 3 presser-butt locations. The thumb-thread presser group is inactive after plain knitting and the insertion of the thumb thread.*

GLASS YARNS-



Here Are Some Tips on . . . . Warping . . . . . .

By **HARRY E. MAHLER,** *Owens-Corning Fiberglas Corp.*

WARPING IS THE most important operation in fabricating glass yarns into fabrics and tapes. It is imperative that uniform tension be maintained throughout this operation to warrant satisfactory weaving conditions and quality.

In handling glass yarns for warping, quilling, and weaving the following five points should be borne in mind:

1. Glass yarn is akin in handling to other fine filament yarns; it requires up-to-date equipment for best results.

2. The non-stretch characteristic of glass yarn makes it particularly important to produce warps with uniform tension, as there is no equalizing stretch left in the yarn once it is in the loom.

3. A smooth finish on surfaces of guides, rods, heddles, and reeds is important to avoid abrading the yarn.

4. Clean equipment is necessary throughout to produce stain-free yardage. Cleanliness is particularly important when the fabric is to be used for decorative material, since Coronizing and finishing require clean fabrics for best results.

5. For mills interested in weaving glass yarn, it is recommended a training period be held to give their people "the feel" of glass yarn.

This will help you understand why glass yarns behave as they do

To understand the processes employed to weave glass yarns for decorative or industrial end uses, one must first be familiar with the yarns themselves.

The basic continuous glass filament used has a diameter of about 0.00025 in. By comparison with filament rayon, this is approximately ½ den. on a yards-per-pound basis. Because of the higher specific gravity of glass yarn, it is approximately ¾ den. on a diameter comparison. This condition has to be considered in designing yarns and fabrics of glass.

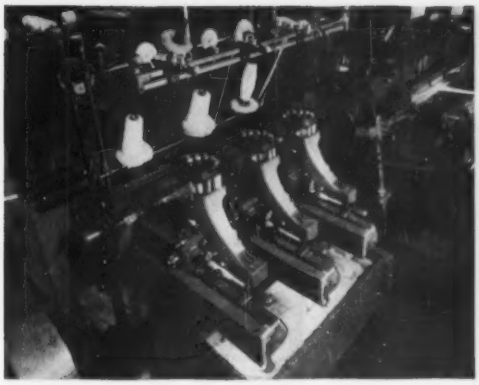
Strands of 102 and 204 glass filaments are drawn in the forming process. The strand with 102 filaments is called No. 900 size and has a nominal yardage of 90,000 yd. per lb. The strand with 204 filaments is called No. 450 size and has a nominal yardage of 45,000 yd. per lb., or the equivalent of approximately 100 den. in yards per pound and 60 den. on a diameter basis. Strands with larger-diameter filaments are also used for industrial and decorative fabrics.

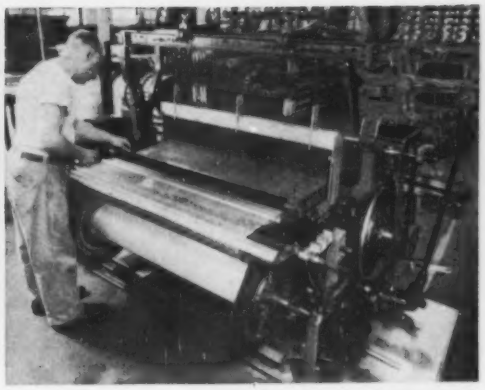
A "binder" or size is applied during forming to bind the filaments together and protect the bare glass during subsequent operations. The percentage of lubricant, slight twist contraction, and necessary manufacturing tolerances lower the yards per pound a few percent.

The filaments are actually extremely fine and highly flexible glass rods, and for all practical purposes do not have any stretch as far as textile manufacturing is concerned. They do not absorb moisture; consequently glass yarns cannot be "twist-set."

As few as 2 or 3 turns per inch in the single yarn make glass yarn too lively for efficient handling in warping and weaving. It is necessary to balance the yarn with two twisting operations. Generally, balancing is done by using a slightly high twist in the first operation, using "Z" twist, and plying with "S" twist.

The yarn is built up to the desired size by twisting and plying a minimum of two or more strands with the desired turns per inch according to end use of the fabric to be produced. Plied yarn is sold ready for warping and weaving without further treatments or sizing necessary, except in the case of single yarn having 1 tpi., which requires warp sizing.





. . . . . Filling Winding . . . . . and Weaving . . .

Warping

The modern horizontal warper and creel with whorl or disk-type tension is particularly suited for warping glass yarns for decorative or industrial fabrics. Warping is generally done with 400 to 600 ends per section or band, at a speed of 200 to 250 y.p.m.

Risers or elevators should be accurately set according to the size of yarn used. Sections or bands must be joined accurately. When beaming down from the mill, it is important to avoid build-up at the beam flanges. Sufficient tension must be applied to obtain a solid beam. Beam flanges must be smooth.

For large-scale production, the warps can be made by direct beaming for some constructions.

Selvage construction must be designed to permit the maximum freedom in the reed to avoid tight selvages.

Weaving

Looms developed for weaving rayon and other filament yarns are recommended for weaving continuous-filament glass yarn—such looms as the Draper XK and XD and Compton & Knowles S-5 and S-6.

These types of looms for rayon are equipped with the larger take-up roll which should be covered with rubber, cork, or some comparable covering material to prevent slipping of the cloth.

Split or lease rods should have a smooth surface, such as are found on chrome-plated brass rods. Standard flat steel heddles with oval-shaped eyes are satisfactory, but stainless-steel heddles are now recommended for longer life. Standard reeds with semi-oval and oval dents can be used, but stainless-steel reeds are preferable for longer life and easier cleaning.

For the weaving of glass leno fabrics, it is recommended to use the inverted top and bottom doup steel heddles. This leno harness equipment is easier on the yarn and does not require the jumper motion. On lenos it is also preferable to use a finer reed and skip a dent to reduce air space and possible reed marks. Heddles should move freely on the harness frame and be evenly distributed.

To ease strain further on non-stretchable glass warp yarns, it is recommended to have the whip roll mounted on springs (Durkin preventer), which is similar to a "knee action."

Full front center is recommended for harness time, with as little power as possible on the pick motion.

Dutcher temples with rubber rolls and post temples, which are also called "crowhops" or "smash eliminators," are recommended for fabrics which have a tendency to pull in at the selvage edge. The post temples have the function of easing the pressure of the filling on the outer selvage yarns.

For weaving continuous-filament glass yarn, a smooth surface covering of the race plate is best, such as felt for continuous yarns and metal for staple or combination yarns. The metal plate eliminates the possibility of fiber build-up on the race plate. Adhesive tape, gummed kraft paper or Scotch tape can be used to good advantage.

Standard shuttles can be used, and furring is recommended for continuous-filament glass yarn.

Looms must be in first-class condition, without lost motion in crank arms, drive shaft, and dobby head. The looms can be run fully automatic with speeds from 140 to 170 picks per minute, depending on yarn count and construction.

Filling Winding

Continuous-filament glass yarn can be wound on any type quiller used for other continuous-filament yarns, automatic types included.

Packaging

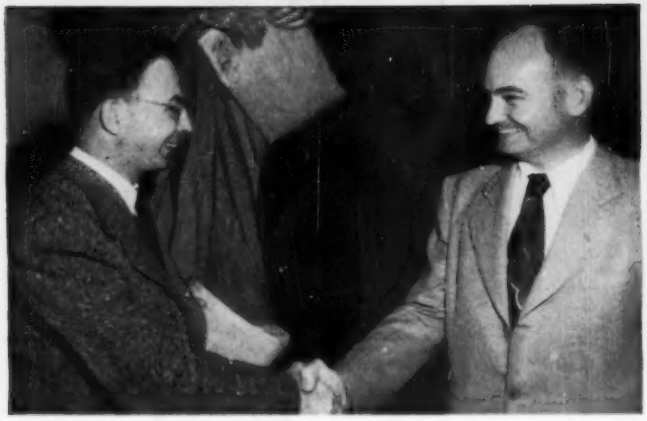
Glass fabrics are wound on a paper spiral tube having a 2-in. inside diameter and a ¼-in. wall thickness. The finished roll is completely wrapped with one thickness of 50-lb. kraft paper.

The size of the roll should be governed by the weight per yard of the material. The weight of any one roll should not exceed 90 lb. which will permit approximately 125 yd. of heavy fabrics and up to 500 yd. of light fabrics.

For protection during shipping and storage, the wrapped rolls should be packed in wooden cases or durable corrugated cartons. Glass fabrics are normally packed two to four rolls per case.

Mill Humidity

A relative humidity of 68% to 70% is recommended. Controlled humidity is particularly desirable in mill preparatory departments such as warping and quilling, where glass yarns are packaged.



JAMES A. BYARS, Riegel Textile Corp., Trion, left, congratulates H. M. JACKSON, newly elected general chairman. Mr. Byars led the discussion on slashing.

H. T. GILBERT, plant manager, Athens Mfg. Co., Athens, led the weaving panel.

Georgia Men Give Data on SLASHING and WEAVING

Information on—

Homogenizers	*Metallized sand rolls*
Slasher blankets	*Plastic loom sheaves*
Hydraulic squeeze rolls	*Vacuum cleaning*
Size-content variation	*Fiber-sided shuttles*

SLASHING AND WEAVING operations were discussed by the Textile Operating Executives of Ga. at its fall meeting in Atlanta.

Twenty-one questions—8 on slashing and 13 on weaving—were selected from questions sent in by Georgia mills. These 21 questions were submitted to the mills, and written answers were received from 30 Georgia mills and mill groups, operating about 1¼ million spindles and 33,000 looms. The same questions were discussed orally at the meeting.

Some of the questions and written answers are published in condensed form here.

Homogenizers

A saving of $115 a week in the cost of starch has been made by one mill as a result of its use of a size homgenizer. The saving is the difference between the cost of thin-boiling starch formerly used and the pearl starch now used.

The 800-gal.-per-hr. homogenizer has to run about 55% of the time to keep five slashers and 1,300 looms running.

"So far," the mill reported, "we cannot see any increase or decrease in loom efficiency."

Size is prepared as follows:

"1. Draw one-third the required amount of water.

2. Add 14.0 oz. starch to the finished gallon.

3. Bring water to required level.

4. Add size compound—6.25% on the weight of the starch.

5. Heat to 200° F.

6. Homogenize with first-stage valve at 1500 psi.

7. Keep storage kettles at 185° F. and size box temperature at 200°."

Nylon-Wool Slasher Blankets

Slasher squeeze-roll blankets made of a nylon-and-wool blend are not as satisfactory as all-wool blankets, most mills report. Of 16 mills that reported results with the nylon-wool blankets, 13 found them unsatisfactory and 3 like them. Two of the 13 are still using them.

Objections given included:

1. Blanket gets hard
2. Takes longer for it to soften up after the slasher has been stopped for a while
3. Collects more lint
4. Picks up more trash
5. Size percent in yarn not uniform
6. Causes rough yarn and more shedding at the loom

The only advantage given was longer blanket life. The nylon-wool blanket lasts two to four times as long as an all-wool blanket.

Hydraulic Squeeze Rolls

Only one mill reported on hydraulic squeeze rolls.

This mill wrote: "We have air-pressure squeeze rolls installed on our four high-speed slashers. We have not been too highly impressed with them.

"The installation has given a great deal of mechanical trouble, and there is no way to be certain that equal pressure is being exerted on both ends of the squeeze roll.

"There is the advantage of being able to increase pressure on the rolls to accommodate a new blanket.

"We feel that a great deal of our trouble has come from faulty installation of the pressure rolls."

Stainless-Steel Covers

Squeeze-roll surfaces covered with stainless steel are liked by the two mills that reported on them.

One mill wrote: "We have been running two sets of bottom squeeze rolls made of Monel metal for four months and find them highly satisfactory. Hard deposits of dye and caustic build up slower on these rolls than on old-type copper rolls when we slash indigo-dyed warps."

The other mill reported: "Squeeze rolls on all our slashers are covered with stainless steel and have stainless-steel heads welded to the shaft to make the squeeze rolls watertight. They have been entirely satisfactory. They eliminate the necessity of covering squeeze rolls with white lead to prevent rust coming through on the blanket.

"By using a special glue to stick the slasher blanket to this stainless-steel squeeze roll, we can change the blanket in about 15 min. There has been a saving of 10 to 15% in the amount of slasher cloth used. We attribute it to the fact that rust is entirely eliminated."

Size-Content Variation

Size content in slashed yarn varies from 1 to 5% in 16 mills that gave a variation figure. The average for the 16 mills is about 3%.

Causes given for variation included:

1. Blanket condition
2. Size viscosity not uniform
3. Variation in speed
4. Condition and accuracy of cooking equipment
5. Variation in size-box temperature and level

End Breaks at Split Rods

Question: How do you keep end breaks at slasher split rods at a minimum?

Mill A: "The yarn is split into two sections with a 3-in. split rod. Then the top section is split with 1-in. lease rods into as many sections as we have top section beams in our creel. These rods can be elevated from back to front from ½ to 1 in. in height.

"The bottom section is split according to the number of section beams we have in the bottom of the creel. The bottom lease rods are lowered from ½ to 1 in. in order to split the bottom section of the warp."

Mill B: "We wet-split our warp in front of each size box. Then we try to set split rods as close to the front of the cylinder as possible.

"We use extra-large burst rods at the start of splitting to get two sheds far enough apart to equally divide the split between the beams. Ends must not drag against each other."

Mill Z: "We have a small grooved pulley on the end of the split rod and another pulley attached to one of the drive-shaft gears. These pulleys are connected with a small round belt. The split rod turns approximately 10 rpm. We find that this arrangement keeps the yarn breaking better and tends to keep the split rod clean."

NEW OFFICERS elected at the fall meeting of the Textile Operating Executives of Ga. were:

H. M. JACKSON, assistant superintendent, Fulton Bag & Cotton Mills Co., Atlanta, gen. chmn.;

R. J. McCAMY, Pepperell Mfg. Co., Lindale, vice-gen. chmn.;

R. W. PHILIP, vice-president, Callaway Mills Co., LaGrange, sec.-treas.;

ALBERT JOHNSON, Lanett Div., West Point Mfg. Co., West Point, elected to the executive committee to succeed GEORGE D. BAKER, superintendent, Pacolet Mfg. Co., New Holland.

Cloth Doffing

Transporting doffed rolls of cloth from the looms to the cloth room is entirely a manual operation in nearly two-thirds of the mills that gave the methods they use. Of 22 mills that reported, 14 use manpower only. The other 8 use some mechanical means for the haul from the weave room to the cloth room.

A breakdown of the methods used shows that:

1. *In weaver alley*
   a. Dollies are used by 20 mills
   b. Rolls are carried out of the weaver alley in 2 mills
2. *In big alley*
   a. Rolls are transferred from dollies to large cloth trucks or truck platforms in 15 mills
   b. Rolls are transferred from dollies or trucks to cloth conveyors in 4 mills
3. *To cloth room*
   a. Rolls are pushed to the cloth room on dollies in 3 mills
   b. Large trucks are pushed to the cloth room in 11 mills
   c. Motor trucks haul rolls to the cloth room in 4 mills
   d. Conveyors move rolls to the cloth room in 4 mills

NORMAN E. ELSAS, chairman, Fulton Bag & Cotton Mills, Atlanta, reported on a recent trip to Europe. Highlight of his talk was a description of a textile mill in Ghent, Belgium.

Metallized Sand Rolls

Ten mills reported experience with sand rolls on which they had sprayed metal. All ten of them like the performance of the metallized rolls.

The chief problem is to obtain the proper diameter of the roll.

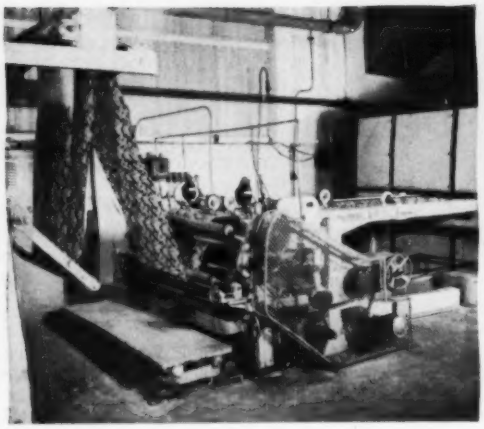
The main advantage in using them is that they hold the cloth better than a tin roll.

Mill B reported: "We have two of these rolls and are well pleased with their performance. We have tried them on combed cotton (34s warp and 37s filling) and carded cotton (68x72 with 21s warp and 22s filling).

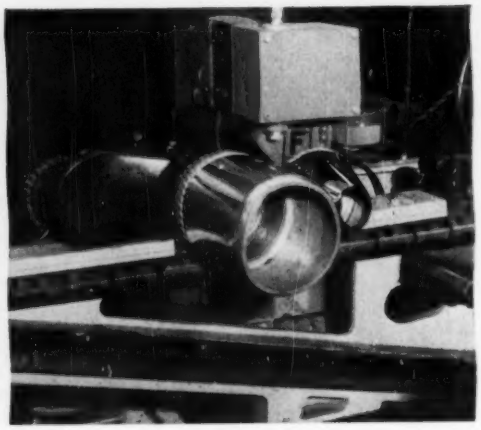
"They do not break fibers, alter the picks, or mark the cloth so that it will show up in finishing."

Mill J: "We have six looms equipped with metallized sand rolls. We think the rolls are better than tin rolls.

(Continued on page 228)



WOVEN FABRICS, such as spun rayons, can be framed in conjunction with the balanced compensation shown here on the entering end of the pin tenter.



ELECTRONIC GUIDER and overfeeder, shown here, make possible framing even fabrics with scalloped edges, such as are found on crepes.

PIN-TENTER Technique Varies with Fabric Framed

Comment by C. Norris Rabold, *Consulting Editor,* TEXTILE WORLD

An essential point of the pin tenter is its versatility. Apparently, it can handle spun rayons, rayon crepes, and other fabrics which are difficult to frame successfully, and can also be used for nylon setting.

It is interesting to note, also, that this frame can be operated at high speeds with accurate overfeed and accurate feeding of the selvages of the goods onto the pins. One difficulty with pin tenters has been laying the selvages of the goods onto the pins without either missing the pins entirely or else putting the goods on an inch or so inside the selvage.

Also of interest is the fact that goods with fluted or scalloped edges can be guided on the frame satisfactorily.

* * *

By **K. S. LAURIE**

AN ENTIRELY DIFFERENT APPROACH to the framing operation is required when a finisher plans to use a pin tenter. This type of tenter is specially designed for dealing with fabrics which require overfeeding and dimensional control. It is very different in purpose from the clip frame which is mainly devoted to simple stretching and flat finishing.

The product of the pin frame should be essentially a relaxed fabric of stable finished dimensions, and for the best results a considerable amount of cooperation between the weaver and the finisher of the fabric is most desirable. With these purposes in view, it can be seen that the handling of cloth on a pin frame is a different problem from that of ordinary cotton finishing.

In general, a pin tenter is most useful for spun rayons, crepes of all material, light wool fabrics, wool and cotton mixtures, tricot fabrics of all materials, and lace. Each of these particular fabrics will require its own technique of handling.

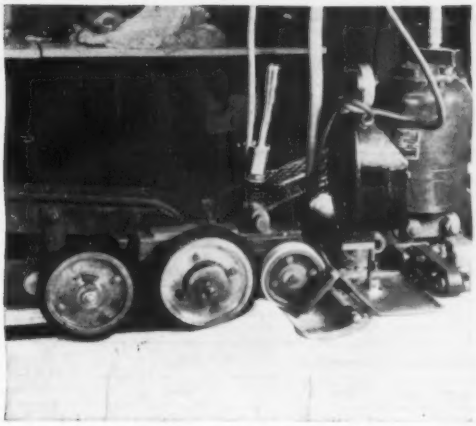
Machine Details

The essential part of a pin tenter is the entering arrangement comprising the entering frame; overfeeding gear; automatic-guiding unit; and, for tricot work, the selvage-uncurling arrangements. All these are highly developed specialties, since the handling of difficult fabrics is one of the main features of the pin tenter.

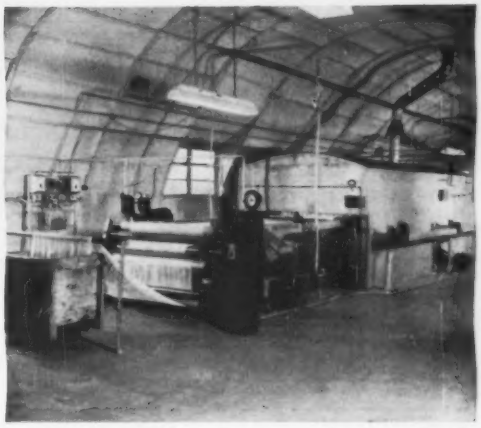
Until recently, a hydraulic guider has been the most successful automatic cloth guider for pin tenters, giving an accuracy on ordinary fabrics of the order of ☆ in. The cloth edges with this guider are contacted by a mechanical finger, operating an air-controlled hydraulic valve which, in turn, operates a hydraulic cylinder to move the entering frames.

This method of handling fabric has proved far superior to any other methods employing motor-driven screws, mainly because of the heavy inertia effects and also the heavy electrical upkeep associated with such motors and control gear. High speeds of running on ordinary cloths have been well within the capacity of the hydraulic guider.

The author, an authority on the operation of pin tenters, is connected with John Dalglish & Sons, Ltd., Glasgow, Scotland. He has visited many mills in the U. S. in the interest of developing the use of pin tenters and, during one visit, was invited to talk on the subject before the American Association of Textile Technologists.



SET-UP FOR TRICOT FABRICS includes automatic feeder, selvage uncurler, hydraulic guider, and overfeeder. Final uncurling must be done close to the guider.



NYLON-TRICOT FABRICS, and nylon laces, can be set on a short machine such as the one pictured. A uniform temperature of about 420° F. is needed.

Electronic Guider

Lately, however, an electronically operated combined guider and overfeed has been developed by Ferranti Ltd. under license from Tootal Broadhurst Lee Co. Ltd. (Largely sponsored by John Dalglish & Sons Ltd., who have now taken over the world patent rights.) The merit of this guider lies in the use of a very lightweight moving part and also in the method by which the cloth is led to the guider, so that only the selvage is under a light tension, the rest of the cloth being entirely relaxed. These two features permit the effective handling of very difficult cloths at very high speeds. For instance, difficult crepe fabrics with scallops in the edges can be guided at speeds of 100 y.p.m. or over.

This guider is associated with a positive type of overfeed, wherein the cloth is held by projecting pins over a portion of the circumference of the overfeeding wheel. These pins withdraw automatically on pressing the cloth on to the pins of the tenter chain. This method eliminates the slip which was generally a feature of the older types of overfeed.

The hydraulic guider is associated with an overfeed consisting of two driven gearboxes, drawing the cloth forward by means of small nip rollers on the selvages. In front of the machine is a driven entering frame equipped with scrolls and with variable-speed rubber rollers driven in conjunction with the overfeed. This apparatus is exceedingly useful to present the cloth at full width and in a proper condition for guiding. The use of the entering frame is not necessary with the new electronic guider except for tricot fabrics, as the cloth is normally presented in a slack condition.

Drying

The heating arrangements to be employed on pin tenter frames must essentially avoid fabric distortion, fluttering, and tendencies to blow the fabric off the pins. It is perfectly possible to combine these features with high rates of output, but it is essential that these points which help with handling of the fabric must be considered first. It is found, also, that fabric movements during drying have a considerable effect on the final feel or hand of the material. Rapid cloth movements produce a much softer hand than does a steady condition of the cloth while drying.

The take-off of cloth at the delivery end of pin frames may be by plaiters or by constant-tension electric batch. Two batches are used to ensure continuity. Here again, tension and rough handling of the cloth must be avoided; and methods have been developed to insure that tensions remain light and that the cloth is delicately handled.

Pre-dryers may be used with pin tenters, provided that the essential conditions of cloth handling are still observed. A roller-type pre-dryer which allows for shrinkage and avoids tension (such as the Proctor) can be used for quite a number of the cloths normally processed, thus speeding output and saving floor space.

Spun Rayons

Spun-rayon fabrics are most commonly found on pin tenters and are also the simplest to handle. A crease-resisting process can be carried out on spun rayons most effectively on the pin range, since the fabric is impregnated and dried at the correct relaxed dimensions before curing takes place. This procedure has a considerable effect on the final stability.

If there is efficient cooperation with the weaver, crease-resistant spun-rayon fabrics can be finished to quite a reasonable degree of stability by proper handling on the pin tenter frame without further chemical treatment. The operator should be sure that correct relaxation is being obtained and is not being destroyed by excessive tensions before or after the frame. Tensions which are quite suitable for cotton finishing are both unnecessary and harmful when framing spun rayons.

Crepes

Crepes are finished on pin frames in large quantities, mainly the types having an acetate warp and viscose crepe filling. The remarks regarding tension of operation apply here even more strongly, especially for light crepes. Pre-dryers in general are unsuitable for crepes, as considerable care is required at entry. The electronic guider shows to its best advantage on the difficult edges encountered in this type of fabric. The drying air must be balanced on both sides of the fabric to avoid distortion and excessive width. In some cases, a varying frame width throughout the length is useful. Crepe fabrics finished on the pin frame are an altogether superior article to those that can be produced by slack drying and subsequent steaming on a clip frame.

(*Continued on page 267*)

Agent	Composition	Manufacturer	Ionic Nature
Aerotex softener H	A cationic material	American Cyanamid	cationic
Amide PES	Stearamide of a polyamine	Carbide & Carbon	cationic
Amine 220 (solubilized with acetic acid)	1 hydroxyethyl — 2 heptadecenyl glyoxaldine	Carbide & Carbon	cationic
Avitone A	An anionic material	Du Pont	anionic
Avitone AW	An anionic material	Du Pont	anionic
$CaCl_2$			cationic
Cetyltrimethyl ammonium bromide			cationic
G-1551	A sorbitan ester plus some polyalkylene-oxide derivatives	Atlas	nonionic
G-2149	A polyalkylene oxide ester of stearic acid	Atlas	nonionic
Glim	Ethylene-oxide condensation product	General Aniline	nonionic
Hoffman RL111B	A cationic material	R. L. Hoffman	cationic
MP189S	An anionic material	Du Pont	anionic
Nopcogen 17L	A hydroxylated polyamide	Nopco Chem.	cationic
NSC No. 4	Acetylated stearic amine	Nopco Chem.	cationic
Product BCO	A specialty product	Du Pont	cationic
Tween 20	A polyalkylene oxide derivative of sorbitan monolaurate	Atlas	nonionic
Ucon lubricant 50HB55	A substituted polypropylene glycol	Carbide & Carbon	nonionic

Untreated control fabric gave a voltage of more than 2000

Here's How Nylon Anti-Static Agents

A Du Pont technician tests and charts his findings on 17 of them, names names, and comes up with a list of the most satisfactory ones.

By L. B. CHANDLER
Rayon Department, Technical Div., E. I. du Pont de Nemours & Co., Inc.

EDITOR'S NOTE: *The tests reported below give specialized results and should not be interpreted as the final word on the usefulness of the products involved. They were carried out in Du Pont laboratories, where more than 150 anti static agents were examined; and results given were reached under conditions existent at the time and place of the tests.*

WE RECENTLY TESTED over 150 anti-static compounds for nylon in the Du Pont laboratories. Although we found none which persists through laundering, we found several that give considerable protection against accumulation of charges during processing.

From the data listed in the table below, it is plain that the effective concentration of the best of these agents lies in the range 0.1 to 0.5% of the fabric weight. The most effective are: Avitone A, Amine 220 (solubilized with acetic acid), Amide PES, cetyl trimethyl ammonium bromide, Glim, Hoffman RL111B, Product BCO, and Tween-20.

All these agents can be applied in the final rinse following dyeing. The fabric will retain its anti-static properties after drying, through inspection, layout, cutting, and fabrication. The finished garment, too, will be anti-static until it is washed.

All agents listed in the accompanying table are water-soluble. Therefore they are of a non-permanent type. They can be applied to the fabric in the final rinse water, after dyeing, without interfering with the normal finishing process.

Some may stain the fabric. They may deteriorate by standing, or may react with detergents used in laundering. Some also may produce harmful toxicological effects either in the finishing plant or in final use.

How the Tests Were Made

After thoroughly wetting a 9x10 in. piece of 275x120 nylon satin with the anti-static agent, we dried it under uniform conditions.

We measured electrostatic voltages by dropping the charged fabric into an aluminum beaker insulated from the ground and connected to a voltmeter. We charged the nylon by rubbing it ten times with a neoprene-gloved hand. The voltage produced depended on the vigor of rubbing, amount of surface exposed to rubbing, particular glove used, time lag in transferring the sample from the gloved hand to the beaker, the com-

Electrostatic Voltage vs. Percent Agent Applied

2.5%	1.5%	1.0%	0.7%	0.5%	0.4%	0.3%	0.2%	0.1%	0.05%	0.01%
	30					150	2000*		2000*	
				30				120	1900	2000*
				10				500	1800	2000*
			0				100		800	2000*
10		50					800	2000*		
				20				600	1800	2000*
		50		70				120	800	
				300				800	1000	2000*
				70				700	1000	1500
		70		120				500	900	1200
		10		80				900	2000*	2000*
	0					60	1400		2000*	
				90				2000*	2000*	
				270				2000*	2000*	
	0					100	140		2000*	
				50				130	600	2000*
		140		1200				2000*	2000*	

*or better

Compare With Each Other

pactness of the sample in the beaker, the degree of insulation of the beaker from its surroundings, and the character of the treated-nylon surface.

Variations between individual readings amounted to about 20% at the 2,500-v. level and 50% at the 50-v. level. The values in this table are averages of five measurements.

The washing test for permanency of the anti-static agent was carried out in a Petit table washer containing 5 gm. Fels Naptha in 6 liters of water at 122° F. The fabrics were then rinsed twice in 6 liters of warm water.

Static Electricity—Its Causes and Cures

Static charges are all built up in the same way. The process is based on a transfer of electrons from one substance to another. This transfer occurs when you rub one material with another. It even happens when you remove one sheet of material from contact with a sheet of another kind.

In all cases where an electrostatic charge is built up, at least one of the materials must be a non-conductor. One of the materials will possess a negative charge from the accumulation of electrons; and the other will, of course, be positive.

These charges are all surface phenomena. Any answer which solves the static problem for the surface solves the entire difficulty.

There are five ways to deal with a static charge or prevent one from forming:

1. Prevent the charge from forming by rubbing the fabric only against itself, or another material with the same electrostatic characteristics. (In actual practice, however, there may be a charge developed when sheets of the same material are separated from each other.)

2. Neutralize the charge by blending two fibers in the fabric in such a way that the resulting mixture will carry an equal number of positive and negative charges after contacting a third specific substance.

3. Neutralize the charge by rubbing the fabric first with a material producing a positive charge and lastly with a material producing an equal negative charge on the same fabric.

4. Conduct the charge away, as soon as it is formed, by making the atmosphere conductive. You can do this by giving the air high humidity or by using air-ionizing devices.

5. Make the fabric itself a conductor, or otherwise non-susceptible to electrostatic-charge accumulations.

Possibilities 1, 2, and 3 are so specific that they offer no general solution to the problem. Possibility 4 gives a general solution to the problem, but it requires installation of equipment through the plant. Number 5 seemed to us to offer the only plan of action that would lead to a practical solution. The results charted above are based on that plan.

At the Cotton Spinner-Breeder Conference—

Cotton Men Take a Lick at COTTON PROBLEMS

Improvements sought through—

More one-variety areas
Better labeling of cotton
Gin description of fiber
Fiber specification by mills
Cotton-merchant cooperation
Better ginning practices

COTTON PROBLEMS faced by the various branches of the cotton industry—breeders, growers, ginners, merchants, and mills—were aired at the Seventh Cotton Spinner-Breeder Conference, in El Paso, Tex.

One of the highlights of the conference was a round-table discussion in which problems were presented and questions asked and answered. Some of the information exchanged during that session is presented here in brief form.

Undoubtedly, one of the most significant trends in the textile industry during the last several years has been toward gaining more accurate knowledge of cotton and practicing better selection of cotton for processing. This trend has led more and more toward bridging the gap between cotton in the fields and cotton in the mills.

As the trend continues, more mills are specifying just what cottons they want. Cotton-buying departments backed by expert classers and expert cotton-fiber technicians are becoming the mill pattern.

Inevitably, indirect economic pressure is being exerted on the other side of the "gap." Cotton merchants, growers, and breeders are feeling the impact of the mills' "choosiness."

The Spinner-Breeder Conference was begun seven years ago. Its purpose is to help ease the strain created by the conflicting interests of the various cotton groups.

The information presented here indicates the bee-hive of activity that's going on in the broad cotton industry. It also points the way toward some of the things that mills can expect in the future.

1. More one-variety areas

"There is a great need for more and larger one-variety-of-cotton areas. Instruments to help mill cotton buyers are slow. A buyer's job would be simpler and his buying more satisfactory if he could go to a certain section and know what he's getting. He needs some assurance that the next lot of cotton he buys in a certain area will be of about the same character as the last lot."

2. Labeling

"One-variety communities should label their cotton, not only by grade and length, but also by variety, locality, fiber characteristics, year of growth, etc. Mills would then know just what they get and where it came from."

Question: "How is lint-certification done in the few communities that are now doing it?"

Answer: "The seed, variety, and area of growth are identified."

Q.: "Does the program go far enough?"

A.: "No. It should be extended to cover all the cotton grown."

3. Bale identification by gin

Q.: "Has bale identification by gins helped in buying cotton?"

A.: "Yes. "Dog days" are a rough time for cotton mills because of weather conditions. We increased production 10% during "dog days" by selecting cotton by fiber characteristics and setting it aside to run during "dog days." We selected these bales largely by gin identification."

4. Fiber specification by mills

"A good many mills have such rigid cotton requirements that they specify fiber properties. The trend is very rapid in that direction. It will continue as testing equipment is developed.

"Cotton merchants are falling in line. Already, several have put in laboratories."

5. The cotton merchant

Q.: "Do cotton-merchant laboratories improve the mill's chance of getting the cotton it wants?"

A.: "We think so. We'll try it."

Q.: "Only a few merchants have put in laboratories. We find that the farmers are discouraged in trying to sell one-variety cotton. Merchants are not interested. How can the cotton get through to the spinner?"

A.: "The market-place is the merchant. He should get behind the one-variety movement and take the cotton to the mills. Merchants are getting fiber specifications but have not gone through with them. Some merchants have filled orders satisfactorily with Micronaire readings and also on strength specifications."

Comment: "I've found that merchants won't offer specified cotton for sale until they own it. When they accept your order, the cotton comes through as specified."

Q.: "Won't the merchant be forced to carry a large stock of cotton, or can instruments be of use at the time of negotiation?"

A.: "Tests can't be made rapidly enough to base buying on them. The best practice is to make spot checks. Mistakes will be made, of course. But a 10% check (or smaller in large lots) will tell whether you're working in one variety.

"Several hundred tests can be made in a day. If the cotton producer can make his product more uniform, fewer tests will be necessary."

Q.: "If the mill specifies variety and area of growth, the merchant's risk is increased. If instrument results alone are specified, without regard to variety or area, the risks are decreased. But if tests are too slow for use in buying, where does that leave the mill and the merchant?"

A.: "Use tolerances.

"We all know that buying by instrument results, with or without variety and area specifications, is a better system than the old rule-of-thumb system. We must start somewhere if we're to change over to the new system.

"So both the mill and the merchant should set tolerances and keep cotton lots separated from different localities. In this way, cotton of the same broad characteristics can be kept together."

6. What mills want

a. *Cheaper cotton.* Cotton is too high to compete with some of the synthetic fibers in applications where synthetics can be used. Conversion of spindles from cotton to synthetics will continue until the price of cotton is more competitive.

Cost of cotton has increased out of proportion to the mill's other operating costs. For example, improvements in machinery and methods have

kept one mill's labor cost per pound of yarn almost as cheap with a minimum wage of 85¢ per hr. as it was 15 years ago with a minimum wage of 30¢ per hr.

b. A new variety of cotton. What is needed is one with a staple length of 1⅛ to 1⅛ in. and not too fine fibered.

[A Hopi-Acala cross that breeders have been working on for several years may be the answer to this need. Several strains of this new variety will be put through spinning tests this year.]

c. All cottons to be less neppy.

d. Better ginning. One mill compared 1949-1950 strict middling cotton with the same grade of cotton used from the 1946-1947 crop. The 1946-1947 cotton was much better for spinning.

One of the chief causes of the poor spinning qualities of the 1949-1950 cotton was the presence of small motes. Apparently, gins are being set closer and closer in an effort to get all the lint possible off the seeds. They're nicking the seeds, and the mote particles are injuring the spinning quality of the cotton. Comparative waste analyses of the two cottons showed a surprising increase in these small motes.

Mills have better cleaning equipment than gins. Most mills would prefer that the recent trend toward gin-cleaning cotton be abandoned. Results would be better if mills did the cleaning on slow machinery that gins are now doing on fast machinery.

Bad practices that mills would like to see eliminated include:

First, cotton growers handling cotton too roughly, taking it to the gin too wet, and insisting on fast and close ginning.

Second, ginning so fast and close that linters are taken off seeds.

Third, gin dryers overheating cotton. It is common practice for gin dryers to heat cotton to 300° F. The cotton is damaged by heat. The "dead" cotton won't spin; it tears up the spinning department. Dye affinity of the cotton is affected, and unsatisfactory dyeing results. There has been a noticeable difference in the dyeing qualities of cotton in the last few years.

[The National Cotton Council proposes to learn the cause of the difference.]

7. Other questions and answers

Q.: "In taking bale samples for fiber tests, do you get representative sampling by using the classer's samples?"

A.: "Yes. In a large series of tests that involved many bales of cotton, the classer's sample from each bale was tested. Several samples taken from other parts of the bale were also tested. The differences in the fiber-property values obtained from the two methods of sampling were insignificant."

Q.: "How is the best way for a mill to change from old-crop cotton to the new crop?"

A.: "Spread out the change. The first week, make up opening-room mixes with 90% old-crop cotton and 10% new-crop. The second week, change to 80% old-crop and 20% new-crop. Keep increasing the amount of new-crop cotton 10% each week until the mix is 100% new-crop.

"Change-over problems can be further lightened by having the laboratory determine in advance the differences between the new and old cotton."

Q.: "What kind of paint should be used in marking cotton bales?"

A.: "A paint that will wash out. In the mill, we use chalk that will dust out or wash out. We've had trouble with stencil ink used to mark bales of cotton. The stuff won't always wash out."

Comment: "Instead of ink, use an extra card and stamp it or mark it."

Q.: "Is it safe to use camouflage cloth as a bale covering?"

A.: "This year in South Georgia they used a light net camouflage cloth on some of their bales. The dye in the cloth rubbed off on the cotton. When a bale got wet, the dye washed into the cotton.

"Whether it is rubbed on or washed on the cotton, it doesn't come out easily. It's very objectionable. Some mills are turning down this kind of cotton."

The What and Why of "SUPER-COTTONS"

4 Questions answered—

What are super-cottons?
What will they mean to mills?
What will they mean to consumers?
What do super-cottons still need?

By GEORGE BUCK, *National Cotton Council*

DURING 1950, the term "super-cotton" appeared frequently in the trade publications and even in several well-known newspapers. Plans have been completed for an accelerated breeding program for various super-cottons in a tropical region in Mexico. One of the new super-cottons has progressed to the stage of extensive mill-scale trials in which it will be made into a variety of products. The next step may be the advertisement by leading department stores of super-cotton dresses and shirts.

Perhaps it is time to ask ourselves a few rather searching questions about these super-cottons.

1. Just what is a super-cotton?
2. What will the new cottons mean to the mills?
3. What will they offer the consumer in new or improved quality?
4. Finally, if we haven't yet got the ultimate super-cotton, what characteristics or properties should that ideal fiber possess?

What is a super-cotton?

All the new cottons thus far developed that have been classed as super-cottons are simply very good cottons with unusually high values in tensile strength. They have a low nep count during processing, spin well, and produce a yarn of better-than-average appearance. Fiber strength runs from 100,000 to 130,000 lb. per sq. in. against about 80,000 lb. for Upland cottons. They spin into yarns that have 25% to 75% greater strength.

Some of the new cottons have appreciably greater luster than the cottons in general use. However, it is yet to be proved that the advantage in luster is maintained after commercial mercerizing. The new cottons may have improved properties other than strength; if so, they have not been evaluated yet.

What will the new cottons mean to mills?

We are now trying to learn the answer to this question by mill-scale tests on one of the new super-cottons. About 25 mills are cooperating in an elaborate study of this cotton. They are processing it into products ranging from fine dress goods to tire cord

and canvas. It will be another six to nine months before all the results of this testing program have been returned and evaluated; but if the cotton comes up to expectations, it should be of considerable value to mills.

First, the low neppiness and good yarn appearance will permit more efficient processing into superior yarns and fabrics.

Second, the higher fiber and yarn strength mean fewer ends down in spinning and present the possibility of increasing production by using lower twist.

Third, yarns and fabrics will meet minimum strength specifications more easily.

Fourth, blending the super-cottons with below-average cottons may overcome the deficiencies of the poor cottons.

Fifth, for some uses, the new cottons can take the place of the expensive extra-long-staple cottons now largely imported.

Aside from possible processing improvements, unusually high values in tensile strength may be of no significant advantage to certain mills. The appearance and performance specifications of many standard constructions, such as print cloth, can be met satisfactorily with the cottons now available. It is difficult to see what marked advantage might result from the use of a cotton that simply adds an extra increment of strength to these fabrics.

Nevertheless, the mill-scale evaluation of the new cotton includes these standard fabrics so that any possible advantages other than processing can be determined by tests on the finished fabrics and by service testing.

What do super-cottons offer the consumer in new or improved qualities?

The new triple-hybrids, inter-specific crosses, and other super-cottons already developed or being developed will not possess any new qualities not found in ordinary cottons; but they will have certain qualities to a greater degree.

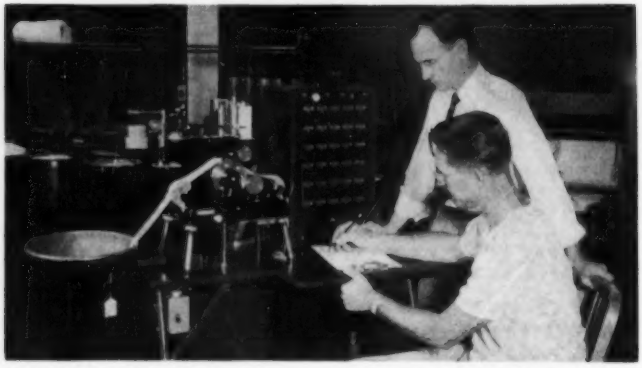
Strength is the one characteristic that is outstanding, with luster a possibility and other qualities largely unexplored.

Greater strength in cotton is particularly desirable in industrial uses such as tire cord, duck, bags of all types, power-transmission belts, fire hose, cordage, twine, industrial thread, and laundry nets. The household uses in which stronger cottons are sought include blankets, rugs, domestic sewing thread, and dish cloths. In clothing uses, super-cottons are most needed in women's and children's hosiery, children's nightwear, and in women's corsets and girdles.

The greater strength of super-cottons may be important in a number of additional uses in a more indirect manner. If cotton is appreciably stronger, less of it can be used in certain cost-critical applications, thereby affecting a saving. In other uses, including many items for the armed forces, minimum bulk and minimum weight are quite important. It is expected that the strength of the new cottons may permit the use of lower-weight, less bulky cotton products that will still meet requirements for strength.

STRENGTH NOT EVERYTHING. One serious qualification must be made in any prediction of the usefulness of new high-strength cottons.

If the new cottons are inferior to normal cottons in a few important qualities other than strength, much of their value may be lost. Of some concern is the fact that initial tests indicate that the super-cottons may be



***PANEL BOARD** to the right of the author, standing, contains 30 electrical counters which record evenness of sliver tested.*

Converted SLIVER TESTER *Speeds Evenness Analysis*

By R. A. RUSCA

A Saco-Lowell sliver tester at the Southern Regional Research Laboratory has been converted to speed up obtaining of data from the sliver tested. The development consists essentially of replacing the strip-chart recorder on the sliver tester with a series of 30 electrical counters, so arranged that there is one counter for each of the 30 spaces found on the conventional chart.

As the sliver runs through the tester, a contact point on an arm moves up and down a set of insulated copper bars that are connected to the counters —each bar to its own counter.

A timing device momentarily turns on an electric current at pre-set intervals, and that counter will register which is connected to the copper bar touching the contact point at that moment.

The timer may be set to measure sliver in ½-, 1-, 2-, 3-, 4-, 6-, 12-, and 18-in. lengths. Up to 1,440 points in 20 yd. of sliver can be measured, and these measurements in terms of 0.001 in. will automatically be tabulated on the counters.

The counters present the data in a form ready for analysis for standard deviation or other statistical treatment. With experience, an operator can judge the uniformity of the sliver merely by observing the number of counters which have registered—the fewer counters affected, the more uniform the sliver.

An automatic knock-off motion stops the instrument at the end of a 20-yd. test.

Mr. Rusca is cotton technologist in the Cotton Mechanical Processing Div. of the Southern Regional Research Laboratory at New Orleans, La.

lower in flex and fatigue resistance than normal cottons. If future tests establish lower flex resistance as a definite characteristic of super-cottons, it could mean that:

1. High strength is not a sufficient advantage in tire cord and transmission belting.
2. The effectiveness of wrinkle-resistant finishes will be impaired.
3. Wear resistance will be reduced.

These are just a few of the factors being evaluated on one super-cotton this year. Results will not only benefit that variety, but will also provide information to guide breeders in the development of cottons needed 5, 10, or 15 years hence.

What properties should the ideal cotton fiber possess?

If it takes six to ten years to stabilize a new cotton variety, and perhaps a few more years to get it into production, it would seem important to know in advance what qualities will make a cotton commercially successful.

From the standpoint of the cotton industry as a whole, if cotton is to meet the rising competition from synthetic fibers, plastics, and paper, it is vital that new cottons that can successfully compete with specialized materials be made available.

Cotton's present position as the leading textile fiber of the world is principally the result of a wonderful combination of desirable physical and chemical properties inherent in the fiber. Cotton has a balance of qualities; a "super-super-cotton" can't be created simply by increasing all of cotton's good qualities. When any one property is increased, it must be at the expense of another.

Stronger cottons will generally be less flex- and fatigue-resistant, and possibly less abrasion-resistant. If cotton is made more absorbent, it will be slower drying and possibly more susceptible to mildew. If less-absorbent cottons are produced, they will be harder to dye. If smoother, more lustrous cottons result from the breeders' efforts, they will likely have lower adhesion for plastics in coatings and laminates. If a more extensible cotton can be bred, fabrics made from it will be less dimensionally stable.

SPECIALIZED COTTONS. New and improved qualities developed in cotton by breeding research will mean specialized cottons—cottons not quite so versatile, not quite so widely useful as heretofore, but better for certain uses. These cottons will be a better match for the synthetics that are now edging cotton out of some markets because of specially engineered properties.

There are plenty of examples that show how these less versatile synthetics can displace cotton. Tire cord is a good one. Rayon, a weak fiber when wet, functions safely when imbedded in rubber. By savings in bulk and weight resulting from its continuous-filament form, it can make a cheaper tire. Other examples are the inroads rayon has made in women's clothing because of luster, draping qualities, and sheerness, in spite of inferior durability and launderability. Saran, a plastic monofilament, has gained in upholstery uses largely because of stain resistance. Many other examples could be cited for glass, nylon, Orlon, etc.

Fortunately, the nature of the cotton fiber is such that even highly specialized varieties will remain more versatile than their man-made competitors. We would not expect a "super-lustrous" cotton to be significantly less launderable than normal commercial cottons. It might very well be more soil- and stain-resistant.

Specialized cottons have much to offer if they are used intelligently; that is, in the uses to which their properties are best suited. They can, in some cases, be worse than the present commercial cottons if put into the wrong products.

NO IDEAL COTTON. In the final analysis, there can be no ideal cotton for breeders to develop, at least from the viewpoint of the ultimate consumer. There can be any number of specialized or "super" cottons, however; and "super" will not connote tensile strength as it does now. There are at least ten qualities—including luster, drape, soil resistance, warmth—in cotton goods that are more important to the consumer than higher tensile strength. Many of these consumer qualities are directly influenced by fiber properties that can be modified by triple-hybrids, trick crosses, and other manipulations that make up the science of cotton breeding.

Studies on the utilization of cotton and the manner in which the fiber performs in yarns and fabrics have not progressed far enough to permit blueprinting the various types of cotton fibers toward which breeders should point their researchers.

Tensile strength is known to be important, but not all-important. Luster is a very desirable quality, one that would help cotton much more than higher strength. A smoother fiber, having few or no convolutions and a minimum of surface imperfections, should be more lustrous. Changes in the crystallinity and crystalline orientation should also influence luster.

A less crystallinic cotton—possibly weaker than normal, but more easily swellable and receptive to resins, chemicals, and dyes—would be extremely valuable. Such a cotton would take wrinkle-resistant finishes better, would dye in fuller colors, might well have greater flex life and greater durability. It would probably be more extensible, could be made more resilient, and would be highly desirable in uses ranging from tire cord to blankets. It would certainly drape well and be a "natural" for the women's dress market.

D-13 Standards Committee

(*Continued from page 107*)

If the proposed recommendation is approved by the sub-committee, the recommendation is voted on by the entire committee D-13 by letter-ballot. If approved, it is recommended to the Society for publication as a "tentative." Two-thirds vote at the annual meeting of the ASTM is required for acceptance of the recommendation for publication.

For the adoption of a "tentative" as a standard, the sponsoring subcommittee must take a letter-ballot for recommending this action to D-13. A letter-ballot by D-13 is necessary to recommend to the Society the advancement of the tentative to a standard. The advancement becomes effective when approved through a Society letter-ballot.

This procedure, of course, takes time, but a tentative method can be used by the industry, and by the time it becomes standard, the committee and the industry are quite certain that it is right and that it should be adopted.

The growing importance of internationally recognized standards has led Committee D-13 to sponsor American participation in the work of the Technical Committee on Textiles of the ISO, the international organization for standardization. This work is done through the American Standards Association in cooperation with the American Association of Textile Chemists and Colorists. An interchange of ideas with other countries in the ISO on such subjects as textile terminology, commercial weights and moisture regain, identification and analysis, color fastness, shrinkage in laundering, and testing of fibers, yarns, and fabrics has been in progress since the first international meeting two years ago in preparation for a meeting to be held in June, 1951.

AATCC Sectional Papers Reveal New Techniques

- *Piedmont Section wins annual contest at 29th annual convention*
- *Irrigated-cotton dyeing difficulties laid to different reflectance*
- *Quality of all six papers submitted is high*

THE THREE "BEST" PAPERS submitted at the recent AATCC annual convention at Portsmouth, N. H., pointed out why irrigated cotton dyes differently from rain-grown, how nylon can be piece-dyed on convenional equipment, and when a simple lab technique for correlating dye exhaustions can be used. The papers coming one-two-three in the judges' opinion were prepared by the Piedmont, Rhode Island, and Philadelphia sections respectively. The New York, Northern New England, and South Central sections also submitted papers.

The following digests of the six papers were made by the TEXTILE WORLD editors covering the convention. They are submitted to our readers in the belief that the highlights of the papers, arranged thus, will be of use in evaluating the comparative importance in your field of the developments described by the contestants.

IRRIGATED COTTON Merely Reflects Differently

By Piedmont Section, AATCC (First Prize)

There is strong support for the belief that reflectance from dyed fiber surface is the most important single difference in rain-grown and irrigated cotton and is chiefly responsible for their apparently different dyeing properties.

This differing activity of the two cottons was studied at some length; but the results, while interesting, are considered extraneous here because it was later learned that no matter how pigment agglomeration was controlled, or eliminated (for example, by pre-rinsing or by addition of stabilizing agents), the final depth of shade was practically unaffected; and the rain-grown cotton was always heavier.

A slight color difference existed between the raw and scoured cottons, the irrigated being yellower before scouring and whiter after scouring than the rain-grown variety. To find the effect of this color difference in the scoured state on the dyed shades, the color positions were reversed by lightly bleaching the scoured rain-grown cottons until it was just perceptibly whiter than the irrigated. This bleaching had no effect on the comparative depth of shade after dyeing. Furthermore, no color difference can be seen when the two cottons are well bleached, yet the dyeing difference remains.

The fact that mercerization, which so definitely affects surface reflectance, can almost eliminate the dyeing difference between the cottons suggests a novel explanation for the behavior of these two cottons in dyeing. In view of the foregoing, the conclusion must be reached that these two cottons, of a very similar chemical nature, can contain the same amount of dye, distributed throughout the fiber about the same way, and yet not look alike.

By elimination, the solution to this puzzle seems most likely to lie in the surface-reflectance properties of the two cottons. This hypothesis is strengthened in a number of ways. Optical measurements made on the Hunter-Gardner Goniophotometer provided quantative confirmation as to the major importance of reflectance characteristics in the two types of cotton.

PIECE-DYED NYLON Done On Conventional Equipment

By Rhode Island Section, AATCC (Second Prize)

Heretofore it has been difficult to produce dyed nylon piece goods having satisfactory fastness properties, free from warpy or barré effects. The practical and scientific information provided by the investigation of the Rhode Island Section has led to the development of a method of producing satisfactory results by standard commercial operations.

The investigation has indicated the following conclusions on the dyeing of nylon piece goods:

1. Dyeing takes place in two stages. First, the absorption of the dye without chemical bonding; and second, the fusion into the fiber, allowing chemical bonding to take place.
2. The vats can be utilized in practical operation by first applying the dye solution mechanically, followed by a steam treatment for bonding.
3. The rapid-steaming treatment in many cases does not completely fix the dye. However, no migration is observed during drying, so that further treatment can be employed.
4. Each dye reacts differently as to the effect of dyeing assistants, steaming time, and concentration. Individual studies are necessary with each dye.
5. Some of the "blocking effects" are eliminated by this process.
6. The proper selection of dye, dyeing assistants, and steaming time, with or without heat-setting, will produce acceptable dyed nylon fabrics.

Simple Technique Correlates DYE EXHAUSTION

By Philadelphia Section, AATCC (Third Prize)

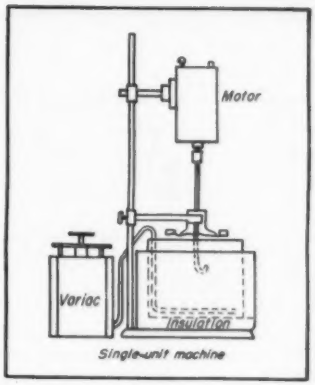
A simple flexible laboratory technique and apparatus for evaluating the rate of exhaustion of dyestuffs which can be easily correlated to mill practices has been developed by the Philadelphia Section.

The new apparatus is simple in its elements, consisting of an insulated water bath, heating coil regulated with a variable transformer, a stirrer with a speed regulator, and an instrument (colorimeter or spectograph) for solution-strength readings.

The insulated water bath was constructed inexpensively by placing a 7-pint enamel kettle within a 15-pint enamel kettle and filling the space between with powdered asbestos.

The heating coil was a 750-w. immersion-type heater placed on the bottom of the inner kettle, which contains a 40% solution of sodium formate.

A variable-voltage controller was at-



Single-unit machine

tached between the heating coil and the power source so that the temperature of the formate bath could be regulated.

The tank, shown in the drawing, is filled with water to a depth of 2½ in., on which is floated sufficient petrolatum to cover the water with a thin layer. This covering will prevent the evolution of steam, thereby retarding evaporation and maintaining the desired bath temperature.

Necessary elements are present in the method-in-apparatus to duplicate any mill run in the laboratory. Once the conditions have been established for duplications on any particular mill machine, it should be possible to reproduce it within the laboratory and thus study the characteristics of new dyes for use in that machine on a laboratory basis. The advantages of such laboratory technique are obvious.

Spectrophotometer Used To Measure DYE STRENGTH

By South Central Section, AATCC

Since the spectrophotometer offers a tool which can precisely measure the concentration of dyes, it can serve a very useful purpose in the investigation of continuous dyeing by direct approach to the problem. Trial dyeings which are used to estimate the amount of dye in booster tanks or Williams units are notoriously variable; colorimetric determination of this fact can be done quickly, simply, and with an accuracy that may easily exceed that of the dyeings. The spectrophotometer results are immediately evaluated in terms of the percent of dye present.

In general, it can be stated that the practical minimum component which may be determined on vat-dye combinations is about 3% of total dye formula.

When more than one dye is involved, observations of strength must recognize the mutual interference of one dye for another in visible spectra and make a calculation for any necessary correction factors.

This procedure is not so difficult as it may sound; in fact, the computation is very much simplified, since the data on all samples are to be obtained on a comparative basis in which one sample is called 100%. For computing factors, we must prepare a suitable solution of each dye, measure it, and record the transmission data in some form. The wave length appropriate to the dyes involved are usually the lowest point of the curve (maximum absorption) on a chart, with due considerations for lack of mutual interferences.

In all combinations of dyes, using the spectrophotometer, the correction factors are solved first and only one time for each particular combination of dyes. The factors are applied to the three approximate-strength comparisons made at the wave lengths used in the sample set up as 100%.

We found that when worsted top, for example, was dyed under the conditions outlined, most vat colors, including the anthraquinones, have good affinity for wool. While they exhaust somewhat more slowly on wool than on cotton, they build up to a greater depth, which is usually between 150% and 200% as compared with a depth obtained on cotton or on silk. As a class, vat colors have good level-dyeing properties and are less selective than the acid and chrome colors with regard to dyeing tippy wool and mixed stocks.

If properly dyed and back washed, vat colors on wool have satisfactory fastness to washing, fulling, peroxide bleaching, and other wet-processing operations. They exhibit a striking superiority over chrome colors with regard to cross dyeing in a boiling sulphuric-acid bath, showing no noticeable change of shade and no bleeding on white wool.

RAYON-FABRIC Tester Gives Shrink Potential

By New York Section, AATCC

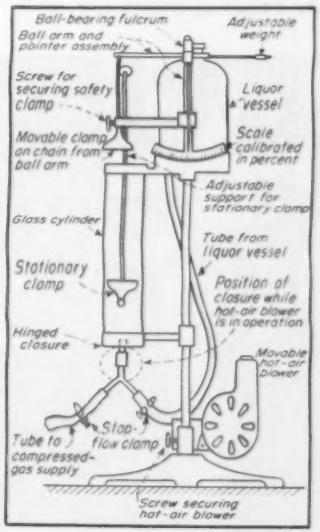
The strip tester to determine shrink potential is a small, relatively inexpensive apparatus. Each test on a strip of fabric can be completed in less than 10 min. Test results from different laboratories at different times are highly reproducible, and tests can be performed by individuals who are not trained laboratory technicians.

The apparatus has a simple construction, consisting of a Pyrex cylinder in which the test strip is held upright between two clamps, the lower clamp being stationary, and the upper one being connected with a balanced arm to which varying amounts of tension from zero upward may be applied. The arm itself is balanced on a ball-bearing mechanism and has affixed to it a pointer-indicator that operates over a scale that is calibrated in fractions of percentage (shrinkage or elongation). The bottom of the cylinder is closed by a hinged metal plate to permit filling with water, and it may be opened to admit hot air from the attached blower. This blower swivels on the main support of the entire apparatus.

In one test, an 81-yd. piece of Fuji-type men's-suiting fabric was cut into 1-yd. lengths, and each alternate number of yards was sent to one of two laboratories for comparative shrinkage tests. Shrinkage tests were made according to CS 59-44 on the tension presser, and on the strip tester. In those cases where the human element was involved, exceedingly wide variations were noted in the results, whereas results with the strip tester showed remarkably consistent results throughout the length of the fabric.

Throughout these initial tests, it became apparent that the basic cause of inconsistencies lay not so much in the fabric as in the testing procedure. It is no problem in pressing the average damp fabric to alter a 10-in. dimension by ½ in. in either the plus or minus direction. Add to this the ease with which an individual shrinkage measurement can deviate ½ in. either plus or minus by a slight finger pressure, and you have a combined extreme variation of 7½%.

Reproducibility of results on the strip



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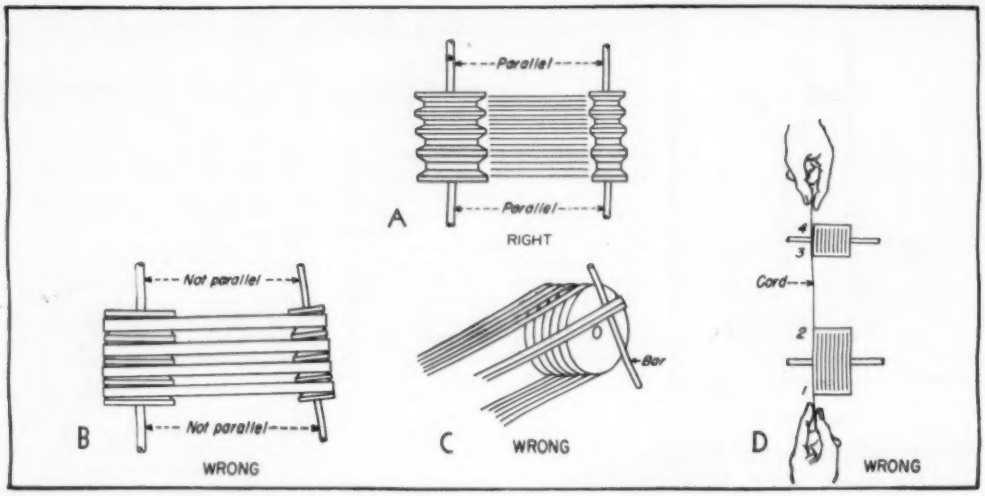


ONE RIGHT—THREE WRONGS. A. Sheaves are parallel. B. Sheaves are out of alignment. C. Belt will be damaged if it is pried on. D. Cord should touch points 1, 2, 3, and 4.

Proper Treatment Increases V-BELT LIFE

HIGHLIGHTS: *Water, oil, and temperature shorten V-belt life—Misalignment of sheaves causes side wear—Proper selection, installation, and maintenance save money on V-belts.*

By TYLER G. HICKS

V-BELT SHEAVES *on these spinning frames are adjustable for pitch to vary the speed of the frames as needed. Proper care of belts will maintain accurate speed.*

SEVERE STARTING and operating loads, moist atmospheric conditions, and the presence of excessive quantities of lubricant often cause trouble with V-belts. Any of these conditions will shorten belt life and increase machine down time. Higher maintenance costs, reduced output and poorer product quality are almost certain to result, together with a loss of machine operator's time.

A well-balanced maintenance program that spots troubles before they become serious will help a mill get more satisfactory service from its V-belts.

Warpers, winders, cards, pin drafters, cleaners, blending feeders, spinning frames, and dryers are a few of the textile machines employing V-belts. The power transmitted varies with the application from less than 1 hp. to 100 hp. or more.

Since wide ranges of operating temperatures, humidities, and lubrication conditions are encountered in these various applications, good V-belt maintenance consists of more than simple replacement of worn belts. To get the most from belts applied to a given unit, the belts must be properly selected, installed, and guarded.

V-belt applications have increased in textile mills because this type of drive has several advantages over the

V-BELT TROUBLES

Trouble	Probable Cause	Remedy
Slippage and failure to carry load	Worn pulley grooves; oily belt; insufficient tension; worn belts; poor alignment; pulley too small	Replace pulley; remove oil or replace belts; move driver to obtain more tension; replace; realign; replace pulley
Overheated belt that gives off an odor	Too much tension; wet belt; insufficient ventilation; belt overloaded; excessively warm air impinging on belt	Reduce tension; dry belts and check length by measurement (replace if too short); provide openings for air circulation; use heavier belts; shield belts from hot air
Noisy operation	Worn belts or pulleys; insufficient tension; damaged belt surfaces	Replace; move driver; replace belts
Excessive belt wear, requiring frequent replacement	Pulleys with burrs or sharp groove corners; too much tension; oily or moist atmosphere; poor alignment; overloaded; poor installation	File burrs and fill in sharp corners or replace pulley; reduce tension; guard belt; realign; use larger belts

older flat-belt drive. It requires less space, maintains better speed ratios between driving and driven pulleys, does not transmit vibration, is easy on bearings, and is clean and quiet in operation.

However, these advantages can be offset by improper care and adjustment of V-belts. For this reason, maintenance must be based on "know-how," not on vague guesses.

LOCATION OF BELTS. Belts that operate in hot, humid, oily, or damp locations are subject to more wear than those in dry, clean places. In general, the surrounding-air temperature in the belt location should not exceed 140° F. unless special belts are used.

The atmospheric temperatures, of course, never reach extreme levels; but the air in tightly fitted belt guards often does when there are no provisions for free and rapid air circulation. The belt overheats, wears rapidly, and breaks or fails to maintain the desired speed ratio.

A tight-fitting guard keeps water and oil off the belt but stops free circulation of air. It is therefore good practice to use ventilated guards for belts fitted to equipment in which the surrounding air temperature is higher than normal, such as in dryers, near large motors, and close to steam pipes.

Oil deteriorates belt material and eventually may cause collapse of the belt. Water causes V-belts to shrink, making them useless or causing excessive loads on machine and motor bearings. For these reasons, all V-belts should be adequately protected from the damaging effects of both water and oil.

BELT STORAGE. V-belts should be stored in a dark, cool place. Horizontal storage on a proper-size bench or table is believed to be superior to hanging the belts from pegs, since hanging may cause elongation.

Driving and driven pulleys must be well matched to prevent undue wear of belts. Grooves that are too small or too large and sheaves with a diameter that is too small will cause rapid wear.

Misalignment of the shafts or sheaves will wear the sides of belts more rapidly than the other belt surfaces. To prevent this condition, shafts of the driving and driven units should be parallel and the pulley faces in the same straight line.

Use of a bar to pry belts onto a pulley is poor practice because belt surfaces are damaged and the strands may be stretched beyond their safe limit. The best practice is to move the driving motor nearer the driven unit, slip the belts over the pulleys, and move the motor back far enough to give the proper tension.

Proper belt tension can be determined by striking the belts with the hand.

In horizontal drives, it is best to have the slack strands of the belt on the top side. Idlers should not, in general, be used to put tension on the belts unless operating conditions require that slack-side sag be on the bottom. The minimum tension that will drive the load without belt slippage produces the least wear on the belt.

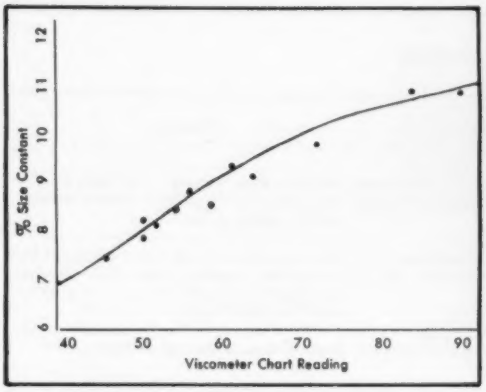
BELT REPLACEMENT. Manufacturers recommend that worn V-belts be replaced with an entire set of new belts. This practice is advisable, but there are some instances where partially worn belts of the same length from two different drives can be used temporarily on another drive. When they are used in this manner, the drive on which the old belts are used should not be one of major importance because belt failure might cause an expensive outage.

As V-belts wear, they ride lower in the pulley grooves and eventually seat on the groove bottom. To prevent excessive wear of the groove, it is common practice to replace belts before they reach the bottom.

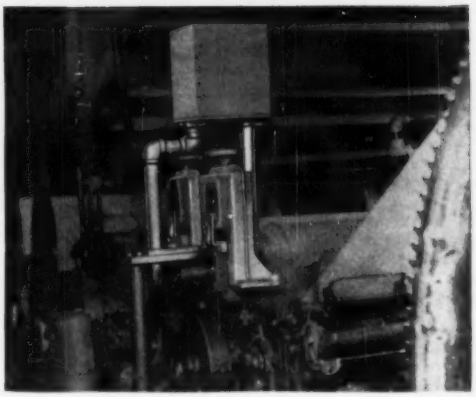
V-belts never require belt dressing; in fact, some dressings will rapidly deteriorate the belts. Occasional adjustment of belt tension is necessary, particularly after installation of a new set of belts; but once a belt has "worn in," adjustments are not apt to be frequent.

To protect new belts, sheave grooves should be clean and free of burrs. When a drive is to be out of service for some time, it is a good practice to remove the belts and store them in a cool, dry place. The sheaves should then be given a coat of grease to prevent rust. Grease must be thoroughly removed before the belts are put on the pulley again.

Regular inspection of all V-belt drives, together with accurate records showing the date of installation and all work done on the belt during its effective life, will permit economical selection and use of belts for drives installed in the future. A well-balanced maintenance program can be set up in a short time, and the results will spread over many years of mill operation.



THE VISCOSITY VALUE that provides the desired pickup for a warp is found by means of laboratory checks on size pickup at various viscosities.



VISCOMETERS installed at the slasher provide an almost continuous check on viscosity at the size box, can record measurements, and sound an alarm if viscosity varies beyond pre-set limits.

Why You Should Worry About SIZE VISCOSITY

▶ ***Viscosity is a measure of size pickup, since other factors in pickup are constant. Laboratory checks on viscosity are inadequate, mills are finding, and a viscometer on the slasher is being used more and more. This story tells why.***

By FOSTER WILLIAMS

THE SIZE CONTENT or pickup of a warp is a function of (a) properties of the sizing solution, which can be measured by viscosity, (b) character of the material sized, (c) time of application, and (d) the effect of the squeezing process. Because items b, c, and d are normally constant, viscosity is also a measure of the size pickup in the warp, and can be used in finding the best size formula for particular warps.

Properties of the Size Solution

The properties of the sizing solution depend upon the type and quantity of size used, how it is prepared, and the operating temperature. Viscosity is a measure of each of these factors because viscosity changes with different types of size. If the quantity of size used is increased, viscosity normally increases. If the operating temperature is increased, viscosity normally decreases. If the size is prepared by cooking, viscosity is low in the early part of the cooking process. The viscosity increases to very high values during the paste stage, and then gradually decreases to the correct value when the process is terminated. If the size is under-cooked, the viscosity will be high. If it is overcooked, it will be too low.

Viscosity is also an important factor when starches are mechanically converted by homogenization, and the pressures applied during the homogenization can be adjusted to obtain the desired viscosity. Size held in the storage kettle at high temperature decreases in viscosity. Furthermore, condensation from the steam used to maintain the proper temperature in the size box dilutes the solution and lowers the viscosity. Mechanical agitation of the size in the box further breaks down the starch and also lowers the viscosity. Viscosity of the sizing solution as it is used is therefore an over-all measurement of all of factors affecting the properties of the solution, and the viscosity will remain constant if all of these factors are not permitted to vary.

The properties of the textile material being sized and its previous treatment will of course influence size pickup to some extent, but normal variations in the character of the material do not appreciably affect pickup.

Time of Application and Squeezing

The time of application of the size depends upon the depth of the immersion roll, level of the liquid in the box, and speed of the slasher. The immersion roll can readily be adjusted to the desired depth. The level of the liquid is normally automatically held constant, and the speed of the slasher for any particular type of warp usually varies over a comparatively small range. If the slasher is equipped with an automatic moisture-content control, and if the speed varies over a wide range, the drying is probably non-uniform; and the trouble should be investigated and corrected.

The squeezing process is very important, and the results obtained de-

(*Continued on page 270*)

NEW MULTIPLE-FEED MACHINES are equipped with automatic blowers to keep lint off vital knitting parts.

AIR CLEANING EVERY HOUR keeps loose fly off the machines not equipped with automatic blowers.

BEARINGS ARE OILED twice a shift, needles once a shift. Machines are thoroughly cleaned and oiled once a week.

KNITTING-MACHINE CARE
Sparks Quality Program

***HIGHLIGHTS:** Utica Knitting Co., Anniston, Ala., raised quality by machine care—Inspection, maintenance, oiling, and cleaning follow set routines—"Harmony of motion" sought.*

By E. DALTON WHITE, *McGraw-Hill Atlanta Bureau*

PRODUCTION OF high-quality knit goods requires careful machine adjustment and regularly scheduled oiling, cleaning, and maintenance, Utica Knitting Co., Anniston, Ala., has found. By carefully following a set routine, the mill has decreased the percentage of defects and the number of machine stops.

Utica has 38 spring-needle machines specially designed and built in the company shops at Utica, N. Y. In addition, there are 15 other machines of Utica design and construction and 220 standard latch-needle machines. Recently, the mill installed nine multiple-feed machines as part of its modernization and improvement program.

With such a large amount of equipment to maintain, machine care and maintenance were developed into a system that is simple and practically automatic in operation.

Knitters and fixers were carefully instructed in all phases of machine maintenance and operations. Oiling, cleaning, and machine adjustments were dovetailed into normal knitting operations in order not to interfere with production.

MACHINE ADJUSTMENT. A great deal of emphasis is placed on adjusting machine parts to a fine degree of accuracy to attain what at Utica is sometimes called "harmony of motion."

All guides are carefully inspected and adjusted to prevent yarn from running under the burrs and pressing off the machine. Cams and needle slots receive constant inspection to avoid cams catching the butts of needles and causing machine jams.

In knitting operations it has been found that slightly less tension on spring-needle machines has practically eliminated defects. Therefore, the proper amount of tension is periodically checked.

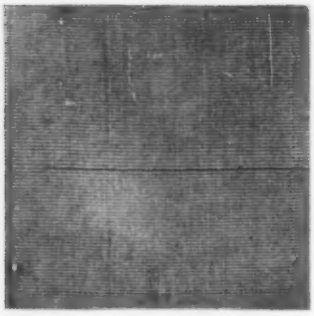
Each machine is air blown every hour, and the multiple-feed machines have automatic blowers installed. The knitter oils each machine twice during the shift. Needles are thoroughly oiled once each day, and there is a weekly oiling of all bearings and moving parts of the machine.

In addition to the weekly oiling, each machine is given a thorough weekly cleaning with a commercial cleaning fluid mixed with a light grade of machine oil. Needles are saturated with the mixture while knitting is in progress.

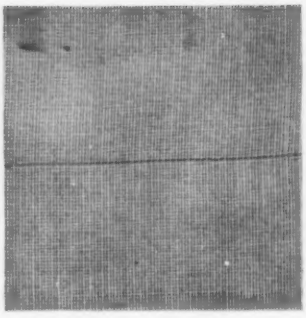
Cam blocks are cleaned individually at regular intervals. The washing fluid used weekly reduces the necessity of frequent cleaning of the blocks. Another advantage of the weekly cleaning is that it keeps the needle race clean and free from lint accumulation.

There is no set schedule for changing needles. They are changed as needed, with the frequency being left to the judgment of the knitter.

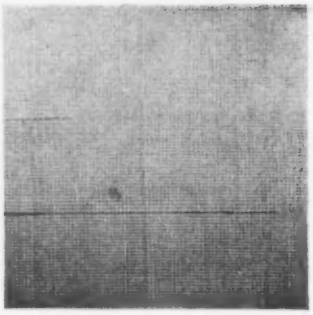
Both combed and carded yarns are used in the Anniston mill. These yarns are carefully inspected and must conform to the standards established by the mill.



(a) DOUBLE PICK here was caused by filling break.



(b) DRAG-IN appears as a shiner on some yarns.



(c) BROKEN PICKS may appear as shiners and tight marks.

FILLING DEFECTS
Give Constant Trouble

***HIGHLIGHTS:** Filling troubles have many sources—Accurate classification of defects is a help to the weave room—Basic cause of a defect must be corrected.*

By ALBERT FRANTZ

ONE OF THE MOST DISTURBING cloth defects in quality fabrics is the broken pick. If a full-length piece contains a number of broken picks scattered throughout the length, it stands little chance of being sold.

There are ways of lessening the occurrence of this imperfection. Several things cause filling yarn breaks, and these causes should be kept in mind so as to hold breakage of the yarn to a minimum.

Yarn breaks often are caused as much by the type of filling yarn and by winding defects as by shuttle tensioning and loom causes. A good many weave rooms spotlight looms, weavers, and fixers when a run of broken picks occur. Sometimes filling-yarn type and winding are disregarded as direct causes of breaks.

There are also a few defects on plain weaves that appear somewhat similar to broken picks and are sometimes referred to as broken picks. It is necessary, of course, that defects be properly classified. Adequate gray-goods inspection plus a follow-up by those responsible for the weaving will usually separate genuine broken picks from defects with a similar appearance.

If the trouble is traceable to the bobbin-winding department, the personnel of this department should also be shown the effects of inferior yarns or poor workmanship. Visual inspection by those handling the yarns will often clear up serious runs of imperfections.

DRAG-INS. Drag-ins often cause defects similar in appearance to broken picks. Drag-ins, of course, are usually caused by long tails of filling yarn being pulled into the shed by the shuttle directly after a bobbin change on an automatic loom.

The same defect occurs sometimes when yarn catches on some rough spot around the box. In such a case, three strands are woven in one shedding—the regular strand from the shuttle plus the double strand that has caught on the obstruction.

A double pick reaches fully across the cloth and can be caused by a broken pick or by a winder doubling.

If a double pick is caused by a filling-yarn break, a lighter-than-usual appearance across the cloth can usually be noted. Such a defect can be seen above at *a*. If a drag-in is the cause of the defect, the beat-up is normal, as is shown at *b*.

The same appearance as in *b* also shows on a double pick that may be caused by a defective bobbin. The defective bobbin may weave the double pick for only a short length, or it may run for the entire length of the bobbin, according to the nature of the plied-yarn defect.

A drag-in, however, usually lies across the weave from six to 10 in., according to the length from the edge of the fabric to the cutter or place of obstruction.

SPLIT PICK. On looms that have a knife filling cutter that presses against a steel plate set in the shuttle wall, a peculiar split-pick defect crops up now and then if the blade is not set properly. If the cutter is set so that the yarn may contact the cutting edge, several filaments may be bruised or cut open. As the shuttle is picked across the loom and tension is applied to the yarn, the open filaments split farther apart. When the yarn is woven in, only one or two fine filaments may run the full length of the weave, the rest of them having stretched apart from one to 12 in.

This defect is similar to a broken pick. But the one or more fine filaments that were not cut have kept the shedding apart, and a fine strand laces the warp yarn. Nevertheless, the defect has the appearance of a broken pick. The defect runs continuously in a line warpwise until the cutter is set properly.

A somewhat similar defect may be caused by the filling-yarn detector needles if the needles need polishing or replacing. If burrs are permitted to remain on the needles, filaments of the yarn will, of course, be cut. The result is a yarn partially opened.

This defect usually has sections of split filling in approximately 1-in. lengths spaced every few picks apart, warpwise, until needles are polished or replaced. By measuring in from the cloth edge to the defect, the source of the trouble can often be determined.

A defect similar in appearance to the broken pick or split filling may be one caused by the box front. Pressing the shuttle into the box for checking and picking is usually done by a box front that presses against the shuttle to hold it within a prescribed position.

At times, the front is set incorrectly, either too close or too far from the front wall of the shuttle. Clearance should be about $\frac{1}{32}$ to $\frac{1}{16}$ in. between the box front and shuttle. Regardless of the setting, rough spots may appear on the box front and cause trouble.

If the box front is rough or worn, filling may catch on it and drag-ins result. If the box front is set too close, the shuttle pitches the filling and causes box stains and broken picks. If it is set too open, the filling has a tendency to balloon under the shuttle; the filling may be cut, bruised, or soiled.

BROKEN PICKS. Broken picks resulting from some causes can be prevented by proper adjustment of loom parts. In the broken-pick defect shown in photo c, the indication is that the strand, after breaking, caught fast in the shed, and weaving continued. This defect probably was not seen by the weaver or fixer. If the defect had been seen, it would have been impractical on some weaves to pick the defect out and reset the cloth. Some synthetic yarns chafe when the filling is disturbed, and a defect of this type is of minor importance compared to a lengthy rip-back and chafed warp yarn.

Shown in c, however, are two different occurrences of the defect. This condition indicates that similar defects probably occurred. Therefore, the defect must have been noticed. Although it may have been impractical to remove the defects from the cloth, the cause should have been determined and corrected.

As is well known, numerous broken-pick imperfections are directly due to damaged bobbins, especially bobbins that are split but pressed sufficiently tight to hide the split. Paper bobbins may have layers open. As the shuttle picks, the force of the pick opens the split, and yarn snares as it unwinds around the barrel. If the yarn snubs against bruises on the bobbin, it stretches and breaks with a quick snap. Sometimes the tail trailing after the shuttle will be closed in the shed, and weaving will continue until the bobbin is transferred or until a break stops the loom.

THE KNOCK-OFF. The center filling motion will prevent defective cloth by stopping the loom on filling breaks. However, as just pointed out, some conditions may arise that offset the effectiveness of the center motion. Foremen and fixers should be alert to find the causes of defects that occur in this manner.

The accompanying sketch here shows the dagger in relation to the knock-off cam. In position d, the dagger is passing under the cam lip. If the dagger point has passed this position and if the yarn breaks, weaving may continue. In such a case, there is no chance for the dagger to strike the cam and stop the loom.

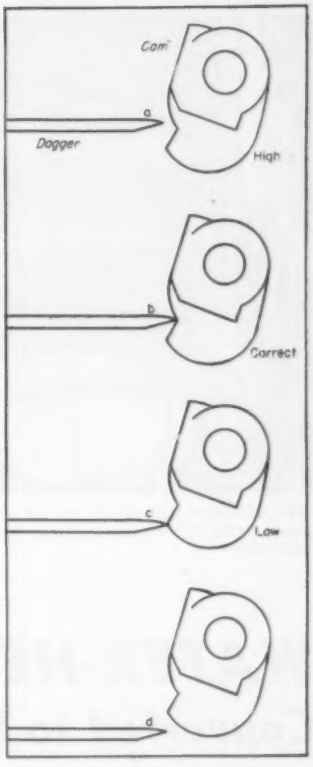
The distance from reed to cloth fell is approximately $3\frac{3}{8}$ in. as the dagger clears the lip edge. This position still gives a fairly open shed, with the shuttle entering the opposite box. At this point, if the filling breaks and snaps back through the closing shed, a long broken pick results.

It obviously is not a shortcoming of the center filling motion that the loom was not stopped and the defect in the cloth corrected. It is difficult to see how the loom can be adjusted to eliminate such defects. Some fixers shorten the dagger length, but this practice is not satisfactory because false loom stops often occur.

The answer is that the yarn break probably was caused by something beyond the scope of loom adjustment. This cause should be found and corrected.

DAGGER AND CAM. If the dagger strikes into the cam too high when a break occurs, as shown at a above, the dagger bounces downward and fails to knock off the loom. If the yarn breaks on a bobbin transfer, the transfer is often made without a loom stop, leaving a broken-pick or thin-place defect. On satin and twill weaves, the imperfection often appears as a mispick.

The dagger should strike exactly center when the crank is just about at bottom center.



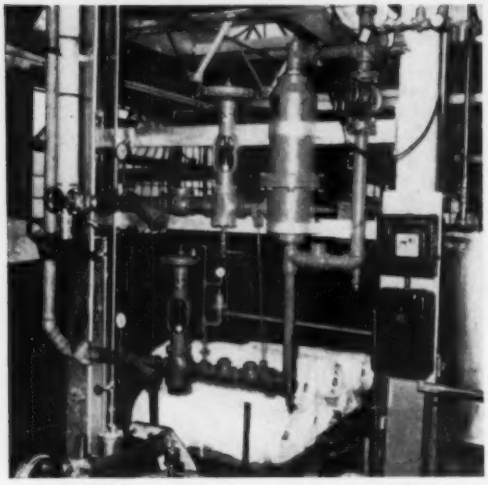
***DAGGER AND KNOCK-OFF CAM** must be timed correctly to stop the loom on a filling break. Only setting b is correct. The others will not stop the loom.*

As shown at *b*, the dagger is striking exactly into the cam lip and should make a perfect knock-off. If timing is late, however, chances for broken picks are increased.

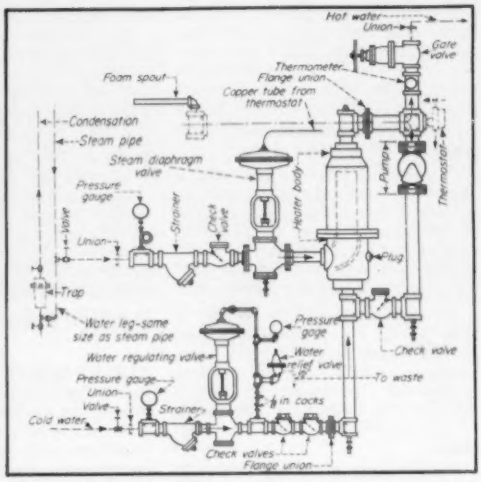
If the dagger is timed to rise upward into the cam near the cam lip, it is timed late. The long adjusting rod should be moved backward on the bottom stand until the dagger levels off approximately $\frac{1}{4}$ in. before it reaches the notch. This adjustment will give sufficient time for the dagger to seat into the cam.

After this adjustment has been made, all other adjustments must be checked to prevent feeler wires and other parts from binding.

At c, above, the dagger is set too low. It strikes near the cam edge. It may be necessary to raise the small adjusting rod to bring the dagger into position. After this adjustment is made, timing and other movements must be checked.



INSTANTANEOUS HOT-WATER HEATER has a capacity of 100 gal. per min. at 180° F. temperature. Overtime has been eliminated by the installation.



PIPING DIAGRAM OF INSTALLATION of the instantaneous hot-water heater shows key parts. All parts can be attached in vertical position to posts or walls. No valuable floor space is required.

WATER-HEATING Time Converted to Production Time

► ***A heater that delivers 100 gal. of hot water per min. has cut water-heating time in a New England dyehouse from 15 min. to 1 min. Result: overtime eliminated and production balanced.***

By E. H. HELLIWELL, *New England Editor, TEXTILE WORLD*

ELIMINATION OF dyehouse overtime through a reduction in water-heating time from 15 min. to 1 min. has been accomplished at Guyan Mills, Inc., Valley Falls, R. I.

In checking the hot-water supply, superintendent E. K. Hayslip found that in the dyehouse of the company plant it took 1 min. to fill a 75-gal. jig with cold water. Another 14 min. were needed to heat this water, in the jig, to the required 180° F. temperature. The total time for filling the jig and heating the water was therefore 15 min. for each dyeing cycle.

The time lost in heating water for each batch prevented the dyehouse from keeping pace with the subsequent drying process on regular working hours. The working hours of the dyehouse personnel were increased to 50 and 55 hr. a week—a costly overtime arrangement.

To solve the problem, an instantaneous hot-water heater was purchased from Pick Mfg. Co., West Bend, Wis. After this heater was installed, the only time involved in getting a jig full of hot water was the 1 min. for filling. The 14 minutes previously spent in heating the water was a net time saving. Elimination of all overtime work in the dyehouse was possible.

The heater is able to heat 100 gal. of water per min. to a temperature of 180° F. This quantity of water is more than the capacity of each jig. The heater is suspended in a vertical position from posts or wall, and it occupies no valuable floor space. Also saved is the space required for bulky storage tanks; yet a plentiful supply of hot water is available immediately whenever needed.

Steam is injected directly into the water; thus the entire heat of the steam is transferred to the water. There are no heat losses at the point of heating, and no radiation losses from stored hot water. It is possible to use steam mixed with water for heating water. A pressurized piston, which maintains the steam pressure in excess of the water pressure, eliminates the noise of pounding and hammering and assures the heating of water in a quietly efficient and economical manner.

A thermostatically controlled valve regulates the flow into the mixing chamber. With the thermostat set for 180° F., this valve allows the injection of the proper amount of steam and delivers water at exactly the required temperature. The thermostat may be set to any desired temperature within the heating capacity.

Maintenance requirements and costs are said to be at a minimum. There are no coils to become lime-coated nor any sediment to be removed. Provisions are made with a recirculating system for quick, effective cleaning without dismantling.

LOOK—NO RULES!

For CARDING and SPINNING Calculations

Make your carding and spinning calculations with confidence—know what you're doing. Here's how.

- **Throw out rules—unless you know what they mean.**
- **Learn basic principles of operations and calculations.**
- **Use common sense in applying the principles.**

By W. A. THOMASON, JR., Southern Editor, TEXTILE WORLD

A FRIEND OF MINE remarked to me recently, "Luke, for some reason the calculated efficiency of my spinning room isn't as high as I think it should be."

I said, "Well, Johnny, let's see how you figured it."

Johnny showed me his calculations. He had found his 100% production by an equation in which the front roll speed is multiplied by the circumference of the front roll, times 60 over 36, times 840 over the yarn number, times the number of hours desired.

Examine this equation closely, and you will see that the yarn number—that is, the size of the yarn wound on the bobbin—is assumed to be delivered at the front roll. This assumption is not true to fact. The size yarn delivered at the front roll is actually a little finer than the yarn wound on the bobbin, due to twist contraction.

His calculated efficiency was low because his 100% production figures were high—he could not possibly produce at the rate he calculated. The yarn number used in the equation should have been increased by the extent of the contraction.

This mistake is a common one, but it would not occur if the person doing the calculations relied on basic principles and common sense instead of blindly following rules.

Here are the principles needed to know and make the major carding and spinning calculations of draft, twist, and production.

Principles of Drafting

Draft is a positive expression of the degree of reduction in size of a lap, sliver, or roving in process. This reduction in size is accompanied by a corresponding increase in length. Basically, it is a ratio of weight per unit length fed to weight per unit length delivered, or length delivered to length fed. Since it is a positive expression, the ratio must always be greater than one to one; if it is not greater than one to one, no drafting has occurred.

You need not memorize any equations to figure draft. Just know what it is, and you make your own equations. For example, if you know that draft is a reduction in weight per yard, the weight per yard delivered is going to be less than the weight per yard fed. Since draft must be greater than one, the equation for finding draft from weights must be weight per yard fed divided by weight per yard delivered.

The same thinking is used to form an equation for finding draft from lengths. Drafts must be greater than one, and the length delivered will be greater than the length fed when drafting has taken place. Draft will be equal to the length delivered divided by length fed.

Draft calculations for all processes except spinning are similar. Spinning-draft calculations differ from the other processes in that contraction must be considered, and for this reason spinning draft is treated separately.

In calculating draft for those machines which remove waste in processing—pickers, cards, and combers—the amount of waste removed as well as the actual drawing-out of the fibers will govern the total amount of drafting performed. To differentiate between the actual reduction in size and the degree of drafting done by drawing-out we use the terms actual draft and mechanical draft.

Actual Draft

Actual draft is a ratio expressing the extent that stock actually has been reduced in size—regardless of how it was accomplished. This reduction in size is accomplished in two basic ways.

Any time waste is removed, "drafting" is done, because the weight per yard of the stock fed is reduced when the waste is taken out. The method used to express the amount of waste removed is "percent waste." This percentage is always figured on the weight fed. Therefore, if you remove 5% waste in a card, you have reduced the weight per yard fed by 5%. You have actually done 5% of your drafting by taking out the waste. Of course, this drafting is a by-product of the cleaning, but nevertheless it occurs and must be considered in figuring draft. In setting up this card, you would put on a draft gear which would cause 95% of the drafting to be done by drawing-out, because 5% is done by waste removal.

Drawing-out or attenuation is the other basic way in which drafting is done. This drawing-out is done by slipping the fibers past each other with air suction, as in pickers; mechanical means, as in cards and combers; or roller drafting as in drawing, roving, spinning, and draw boxes of other machines. Tension drafting actually is roller drafting too, since it is usually done by rolls.

Drawing-out may account for all the drafting being done in a machine, in which case actual draft and mechanical draft will be the same. If, however, part of the drafting is done by waste removal, actual draft will be greater than mechanical draft; because mechanical draft or drawing-out will account for only part of the drafting being done.

Since actual draft is a ratio of the reduction in size of stock, it may be expressed best in terms of weights. From this fact, and the principles of drafting, the equation would be that actual draft is equal to weight per yard fed divided by weight per yard delivered. Of course, each of these weights must be in the same units, such as ounces per yard or grains per yard. The ratio of increase in length is usually expressed as mechanical draft; but if no waste is removed in the process, it will also be the actual draft.

For example, hank roving number is the number of hanks per pound—a ratio of length to weight. In figuring draft on a roving frame, it is much more convenient to use a ratio of hank roving numbers than weights. No waste is removed here, and actual as well as mechanical draft can be obtained from these length ratios.

Mechanical Draft and Draft Constants

Mechanical draft may be described best as the drafting done in the drawing-out process. In other words, it is the degree of drafting done by any means other than by removal of waste.

You can calculate mechanical draft in several ways. First, draft obtained by ratio of length delivered to length fed will account for drawing-out only and give mechanical draft. If no waste is removed, the ratio of weight per yard fed to weight per yard delivered will give mechanical as well as actual draft. If waste is removed, mechanical draft can be found from actual draft if you will multiply the actual draft by the percentage of the draft to be done by drawing-out, which would be by

$$1 - \frac{\%\ \text{waste}}{100}.$$

You need to know mechanical draft so that you can set up a machine to deliver the desired size of stock, or for you to determine the size stock to feed to give the desired stock delivered.

In setting up the draft of a machine, it is common practice to use a "draft constant." A draft constant is the mechanical draft of a machine if you used a one-tooth draft gear. It can be found by assuming one inch of stock fed, which is the length fed; calculating through the gear train, assuming the use of a one-tooth draft gear; and multiplying by the circumference of the delivery rolls, which gives you the ratio of length delivered to length fed.

To calculate the size draft gear to use, set up an equation with mechanical draft equal to the draft constant either multiplied or divided by the draft gear, whichever is applicable. If the draft gear comes in the numerator of the draft-constant equation, obviously you would multiply by it; if it is in the denominator, you would divide by it.

From your actual draft and waste, if any, the mechanical draft you need is found. Then, from the mechanical draft and the draft constant, the proper draft gear can be determined easily if you use the above principles.

Cards

Drafting is performed in cards by removal of waste and by drawing-out of the stock. This same basic principle applies to pickers and combers; which machines are not explained in detail, because the control of draft itself is a minor item in their operation.

As you can see from the diagram given, the draft gear is the gear on the end of the side shaft and is in mesh with the plate gear on the end of the feed roll. A change in the size of the draft gear will, then, affect the speed of the lap roll and feed roll. You can also see that an increase in the size of this gear will speed up these rolls and decrease draft, because for the same length delivered during a given period of time, a greater length is fed.

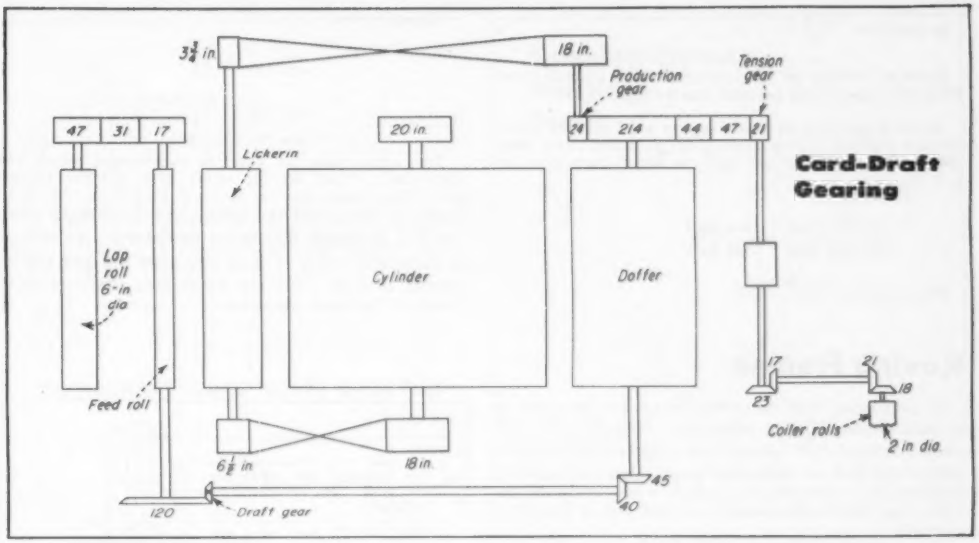
A change in the size of one other change gear will change the total draft. This other one is the tension gear, which is on the end of the calender roll shaft and is only changed to increase or decrease the tension on the web coming from the doffer. An increase in the size of this gear will slow down the calender rolls and coiler rolls and will decrease the draft.

A change in the size of the production (barrow) gear and the lickerin pulley will not affect the total draft. A change in either of them will only change the distribution of draft within the machine.

Here's a typical card-draft problem and the solution using the principles already outlined:

"Using the diagram given, find the size draft gear needed to make a 55 gr. sliver from a 15 oz. lap, if the card removes 5% waste."

$$\text{Actual draft} = \frac{15\ \text{oz. per yd.} \times 437.5\ \text{gr. per oz.}}{55\ \text{gr. per yd.}}$$



$$AD = 119.1$$

$$\text{Mechanical draft} = 119.1 \times \left(1 - \frac{5}{100}\right)$$

$$MD = 113.1$$

$$\text{Draft constant} = \frac{1 \times 47 \times 120 \times 40 \times 214 \times 23 \times 21 \times 2\pi}{6\pi \times 17 \times 1 \times 45 \times 21 \times 17 \times 18}$$

$$DK = 1{,}580$$

$$\text{Draft gear} = \frac{1{,}580}{113.1}$$

$$DG = 14 \text{ teeth}$$

Now, suppose we want to change the size of the sliver from 55 gr. to 50 gr. with the same lap, what changes must we make? You have seen how the draft gear affects draft. If we want to go to a lighter sliver, we want more draft. A smaller draft gear will give more draft, because it slows down the lap and feed rolls. We can, therefore, set up an inverse proportion like this:

$$\frac{\text{old draft gear}}{\text{new draft gear}} = \frac{\text{new draft}}{\text{old draft}}$$

Larger draft gives lighter sliver, so:

$$\frac{\text{new draft}}{\text{old draft}} = \frac{\text{old sliver}}{\text{new sliver}}$$

substituting $\frac{\text{old sliver}}{\text{new sliver}}$ for $\frac{\text{new draft}}{\text{old draft}}$ in the original equation, we have:

$$\frac{\text{old draft gear}}{\text{new draft gear}} = \frac{\text{old sliver}}{\text{new sliver}}$$

$$\frac{14}{DG} = \frac{55}{50}$$

$$DG = \frac{14 \times 50}{55}$$

$$DG = 12.7 \text{ or } 13 \text{ teeth}$$

Draw Frames

In draw frames, any waste removed does not affect the size of the sliver delivered. A very small amount is taken out as clearer waste; and waste lost by end breakage, etc., does not cause the sliver in the can to be lighter. Therefore, actual and mechanical draft in draw frames are equal. All drafting here is done by drawing-out.

The draft gear on a draw frame is located on the driving side of the frame. It is the gear which is in mesh with the gear on the end of the fourth roll, which on conventional frames is the back roll and on five-roll frames is the next-to-back roll. Since the third rolls and the fifth rolls, if any, are driven from the other end of the fourth roll, a change in the size of the draft gear would affect the speed of the third, fourth, and fifth lines of rolls. A larger gear would speed-up these rolls. The calender rolls, front rolls, and second rolls are not affected by a change in the size of the draft gear. Therefore, the draft would be changed between the third and second lines of rolls. A larger draft gear would speed-up the rate of feed (length fed), and the rate of delivery (length delivered) would remain the same. This change would give you a lower draft. Likewise, a smaller draft gear would give a larger draft.

A typical draft problem on a draw frame would involve finding the proper draft gear necessary to give a desired draft, and then finding the size sliver to feed to give a desired size sliver delivered. Here is one:

"Using the diagram given, find the draft gear necessary to give a draft of 6.1 with 6 ends fed. Then, find what size sliver must be delivered from the cards to make a 52 gr. sliver on this draw frame."

$$\text{Draft constant} = \frac{1 \times 70 \times 100 \times 30 \times 70 \times 41 \times 2\pi}{1\frac{5}{16}\pi \times 1 \times 20 \times 74 \times 49 \times 42}$$

$$DK = 286$$

$$\text{Draft gear} = \frac{286}{6.1}$$

$$DG = 47 \text{ teeth}$$

$$\text{Draft (6.1)} = \frac{\text{weight per yard fed (6} \times \text{gr. per yd.)}}{\text{weight per yard delivered (52 gr. per yd.)}}$$

$$6 \times \text{gr. per yd.} = 6.1 \times 52$$

$$\text{gr. per yd.} = \frac{6.1 \times 52}{6}$$

gr. per yd. = 53 gr. per yd. of each sliver fed to the draw frames, which is the size of sliver delivered from the cards.

Suppose you had to lighten-up to a 50 gr. card sliver, but you wanted to keep making 52 gr. drawn sliver, what size draft gear would you use? A larger draft gear will give less draft, so

$$\frac{\text{old draft gear}}{\text{new draft gear}} = \frac{\text{new draft}}{\text{old draft}}$$

The new draft is $\frac{6 \times 50}{52} = 5.77$

Then:

$$\frac{47}{\text{new DG}} = \frac{5.77}{6.1}$$

$$\text{new DG} = \frac{47 \times 6.1}{5.77}$$

new DG = 50 teeth.

Two other gears are likely to be changed which will affect draft. They are the crown gear and the tension gear. The crown gear is changed to give a very small change in draft, and the tension gear is changed when you have to change the tension on the web. An increase in the size of either of these two gears will give you an increase in draft. You can figure their effect on draft, therefore, by direct proportion.

Roving Frames

In calculating draft on roving frames, you may run up against several different situations. Conventional (and some controlled-draft frames) have a regular draft constant; some controlled (or long-draft frames) have a total-draft constant and a front-draft constant, while others of the same type have a front-draft constant and a back-draft constant.

The principles of using draft constants are the same in all cases; find out what zones the constants are figured for and calculate the draft needed for those zones. Then determine the size draft gears you need by using the principles already covered.

Here is a good way to figure the total draft you need on roving frames. Draft, as you know, is a ratio of the reduction in size of stock. The finer the roving, the higher the number; and therefore, to get a positive ratio, your basic equation will be the hank roving delivered divided by the hank roving fed.

On slubber-type frames—those fed sliver—it is common practice to convert the grains per yard of the sliver to the equivalent hank number. Here's an easier way to do the same thing:

$$\text{Hank roving number} = \frac{\text{hanks}}{\text{pounds}}$$

By substituting equivalent values,

$$\text{Hank No.} = \frac{8\frac{1}{3}}{\text{gr. per yd.}}$$

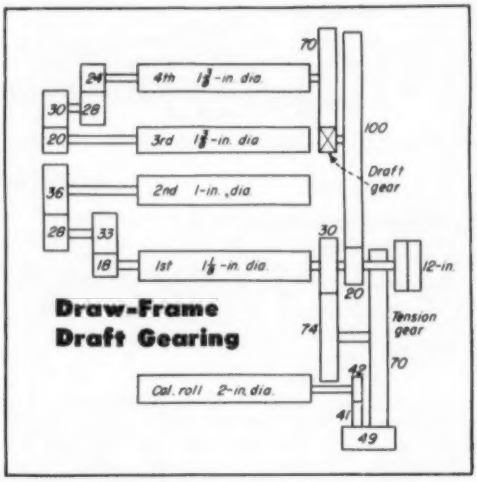
Then,

$$\text{Draft} = \frac{\text{Hank No. delivered}}{\frac{8\frac{1}{3}}{\text{gr. per yd. fed}}}$$

Or,

$$\text{Draft} = \frac{\text{Hank No. delivered} \times \text{gr. per yd. fed}}{8\frac{1}{3}}$$

The same type of thinking can be used to calculate draft needed on intermediates. When you double roving, as is the practice on intermediates, you have doubled the weight for the same length—same hanks, double the pounds—and consequently the hank roving number is cut in half.



Therefore, your equation for draft on intermediates becomes,

$$\text{Draft} = \frac{\text{Hank No. delivered}}{\frac{\text{Hank No. fed}}{2}}$$

Or,

$$\text{Draft} = \frac{\text{Hank No. delivered} \times 2}{\text{Hank No. fed}}$$

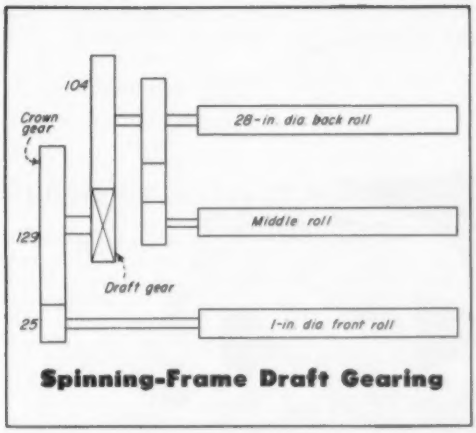
The location of draft gears on roving frames will vary with the type of drafting element. In all cases, however, the draft gear does not affect the speed of the front rolls. In all systems, at least one draft gear will change the total draft by changing the speed of the back rolls; and in the two-zone type systems, at least one draft gear can be changed to change the distribution of draft within the machine without affecting total draft.

Spinning Frame Draft Calculations

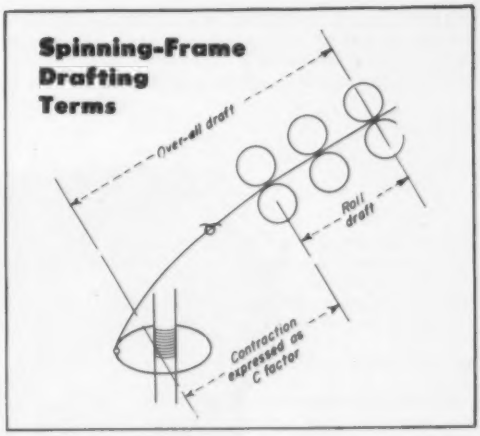
In the accompanying drawing you will find draft terminology a little different from that to which you may be accustomed. I don't think that the terms actual and mechanical draft are appropriate for spinning draft.

The term "overall draft" is descriptive of the draft from the roving to the yarn on the bobbin; "roll draft" is, as the name implies, the draft that takes place in the roller-drafting zones.

Also, I use a new method of expressing the degree of contraction. The purpose of using a "C factor" instead



Spinning-Frame Draft Gearing



of percent contraction is that it is easier to use and understand. If you know what it is, you don't have to remember a rule to know how to use it.

HERE'S WHAT THE C FACTOR IS . . .

The C factor is a positive measure of the degree of contraction in a yarn. It may also be applied to any material which is contracted, shrunk, or condensed in length.

It is actually a ratio of the degree of this contraction. Just as draft is a ratio of decrease in size or increase in length, the C factor is a ratio of increase in size or decrease in length. The C factor has a reciprocal relationship to draft.

Here are some equations for finding the C factor on a spinning frame, based on the definition of the C factor.

$$\text{CF} = \frac{\text{length at front rolls}}{\text{length on bobbin}}$$

$$\text{CF} = \frac{\text{weight per yard at bobbin}}{\text{weight per yard at front rolls}}$$

$$\text{CF} = \frac{\text{yarn number at front rolls}}{\text{yarn number on bobbin}}$$

And here is an empirical equation, based on several thousand contraction tests, to find the C factor from the twist multiplier.

$$\text{CF} = \frac{100}{104.8 - (2.6 \times \text{TM})}$$

If you know the percent contraction, you can find the C factor from this equation, which was derived from the definitions of the C factor and percent contraction.

$$\text{CF} = \frac{100}{100 - \%\ \text{contraction}}$$

HERE'S HOW TO CALCULATE DRAFT . . .

First, let's take over-all draft. You know that the yarn is going to be finer than the roving you fed in. Then,

$$\text{Overall draft} = \frac{\text{yarn number}}{\text{hank roving}}$$

If the roving is doubled in the creel, the hank number will be cut in half. For double roving,

$$\text{Overall draft} = \frac{\text{yarn number} \times 2}{\text{hank roving}}$$

Now, here is the way to figure roll draft. Remember that from the back rolls to the bobbin the fibers are drafted, and then the yarn is contracted. If you know the over-all draft and the C factor, you can find the roll draft like this:

$$\text{Overall draft} = \text{roll draft} \times \frac{1}{\text{CF}}$$

This equation is true because the C factor has a reciprocal relationship to draft. Then,

$$\text{Roll draft} = \text{overall draft} \times \text{CF}$$

You can also find roll draft through the gearing. Assume one inch of stock fed into the back rolls and calculate through the gearing to find the number of inches delivered at the front rolls for that one inch fed.

A draft constant is the roll draft if a one-tooth draft gear were used. The draft gear is the gear in mesh with the back-roll gear on the driving side. A larger draft gear will increase the speed of the back and middle rolls, thus decreasing the draft; a smaller draft gear will likewise increase draft. In the draft-constant equation, the draft gear is in the denominator, and to get roll draft from the draft constant and draft gear,

$$\text{Roll draft} = \frac{\text{draft constant}}{\text{draft gear}}$$

Some spinning frames have an auxiliary draft gear to change the back draft. This gear changes only the speed of the back rolls.

All spinning frames have a "crown gear." A crown gear is the gear on the other end of the draft-gear stud shaft. It is a large gear, normally with over 100 teeth. Being a large gear, the crown gear is changed to give a change in draft smaller than a one-tooth change in the size of the draft gear will give.

Here is a typical spinning draft problem. "Using the gearing diagram of the spinning frame, find what size draft gear is needed to make 30s yarn from 3 hank roving, doubled in the creel, if the twist multiplier is 4."

$$\text{Overall draft} = \frac{30 \times 2}{3}$$

$$\text{OAD} = 20$$

$$\text{C factor} = \frac{100}{104.8 - (2.6 \times 4)}$$

$$\text{CF} = 1.06$$

$$\text{Draft constant} = \frac{1 \times 104 \times 129 \times 1_{\text{F}}}{7/8_{\text{F}} \times 1 \times 25}$$

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$$DK = 614$$
$$\text{Roll draft} = 20 \times 1.06$$
$$RD = 21.2$$
$$\text{Draft gear} = \frac{614}{21.2}$$
$$DG = 29 \text{ teeth}$$

If you change the twist multiplier in a yarn, remember that you can expect a small change in the yarn size because of a change in contraction. If the change is large enough, it can be corrected by a change in the size of the crown gear or draft gear.

Principles of Twist in Roving

The fibers in roving are twisted about each other to give strength to the strand. The amount of twist in roving should be just enough to hold the strand together for further processing. If you have too much twist in roving, the fibers cannot slip past each other, and further drafting is impaired. If you don't have enough twist, the strand will not have enough strength and will break-out in the creel of the next frame.

The degree of twist in roving is indicated by a twist multiplier. Roving twist multipliers range from 0.70 to 1.45. When a twist multiplier, which is an empirical number, is multiplied by the square root of the hank roving delivered from a frame, the resulting answer is the twist per inch to be put into that roving.

The twist multiplier is determined by experience based on certain principles. Coarse rovings don't need much twist, because of the comparatively large number of fibers in the strand. As you go finer, fewer fibers are in the roving, and more twist is needed to give sufficient strength. Long-staple fibers are in contact with more fibers lengthwise in the strand than short-staple fibers and require less twist.

Therefore, the least amount of twist would be needed for coarse roving made from long-staple fibers. As you go finer in roving size and shorter in staple length, more twist is required. The starting point, or point from which to figure, in your particular case would depend on your experience.

Factors other than size of roving and staple length will affect the degree of twist needed. The uniformity of the staple and slickness of the fibers also will influence the amount of twist needed.

Principles of Twist in Yarn

Single Yarns—The amount of twist needed in a single yarn is determined by the strength, density, and feel you want as well as what you are going to use the yarn for. The greater the twist, the greater the density and the harsher the feel. Up to the optimum twist point, strength increases with an increase in the twist. Above the optimum twist point, strength decreases with added twist.

This optimum twist point is reached when just enough twist has been inserted to prevent, or have the absolute minimum of, fiber slippage.

To understand optimum twist, let's see basically how and why twist affects strength. If we start with no twist in a strand, we realize little or none of the fiber strength, because the fibers slip apart. As we add strength we bind the fibers together more and more, but the fibers are being set at more and more of an angle in the strand. With twist then, the strand gains strength by the fibers being bound together, but the strength of each fiber being realized is progressively decreased.

So, to get maximum yarn strength, we want the least angle of the fibers that will prevent fiber slippage. This point, of course, can be determined only by tests.

All yarns are not spun with optimum twist for maximum strength, because strength is not the only factor to be considered. Warp yarns generally have more twist than is needed for maximum strength, because density and fabric characteristics are of primary importance.

Filling yarns usually are spun with about enough twist for maximum strength or a little less. The main requirements of average filling yarns are fullness and a minimum of kinking—high-twist yarns tend to kink.

Knitting yarns usually have the least twist because flexibility, fullness, softness, and a minimum of kinking are required.

Yarns for special fabrics require a particular degree of twist for specific effects. Twist for yarns in a voile fabric must be high to give crispness and stability to the fabric. Crepe yarns have very high twist, so that they will kink and form pebble.

Ply Yarns—Ply yarns are made for the purpose of improving quality or to get novelty effects. Quality is improved; because, in a regular ply yarn, you get greater strength, more smoothness, and increased uniformity by twisting the two or more single yarns together. By regular ply yarns, I mean that the ply yarns have balanced twist.

A ply yarn has balanced twist when the direction of twist in the ply yarn, usually S, is opposite to the direction of twist in the single yarns, usually Z; and is only sufficient to balance the kinking tendency of the single yarns.

Novelty effects can be gotten in ply yarns in many ways. Spiral yarns are made from two or more single yarns with different twist, tension, or feeding speed; or yarns of different size. Covered yarns have the ground end completely covered by the fancy end and are made by feeding the fancy end much faster than the ground end. A nub yarn is made by having an intermittent feed of one or both single yarns, which causes one end to wrap around the other at specific intervals. A ratiné-yarn is made by binding a spiral yarn with a fine yarn, in a second twisting operation, with twist opposite to that in the first twisting operation.

Twist Calculations

Mechanically, twist per inch is the number of turns put into roving by the flyer, or into yarn by the traveler, per inch of stock wound on the bobbin.

Roving Twist Calculations—A twist constant on a roving frame is the number of revolutions of the flyer per inch of roving delivered from the front rolls, assuming the use

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of a one-tooth twist gear. Since each inch delivered from the front rolls is wound on the bobbin, twist per inch equals the twist constant divided by the twist gear, which is in the denominator of the twist constant equation.

Spinning Twist Calculations—It is common practice to calculate a twist constant as the number of revolutions of the spindle for one inch of stock delivered at the front rolls, assuming the use of a one-tooth twist gear. If this constant is divided by the twist gear to find the calculated turns per inch (t.p.i.), there are two slight errors.

One is that the twist is actually put in at the traveler, and the constant used the revolutions of the spindle. As a result of this deviation, a little less than the calculated twist is inserted in the yarn, because the traveler lags a little behind the spindle. This effect decreases as the traveler speed increases when the bobbin is being built.

A more important error is the neglect of the effect of contraction. The twist constant is based on the length at the front rolls. By the time the twist is put into the yarn, the yarn has contracted; so that the actual twist in the yarn is more than that calculated, to the extent of the contraction.

In low-twist yarns, these effects tend to counteract each other; but in yarns with average filling and warp twist multipliers or higher, the contraction more than balances the effect of the traveler lag and should be considered in the calculations.

A good method of figuring-in the contraction is this: Calculate the t.p.i. needed, by the equation that t.p.i. equals the twist multiplier times the square root of the yarn number. Calculate the twist constant in the regular way. Now use common sense.

The t.p.i. you calculated from the TM is based on the yarn number, and consequently the length, at the bobbin. The twist constant is based on the length at the front rolls.

You know that as you increase twist in a yarn, the length decreases. Expressed as a proportion, the relationship between twist and length on a spinning frame would be:

$$\frac{\text{Length at front rolls}}{\text{Length at bobbin}} = \frac{\text{t.p.i. at bobbin}}{\text{t.p.i. at front rolls}}$$

Length at front rolls divided by length at bobbin equals the C factor, as shown in the section on spinning frame draft calculations. Then:

$$CF = \frac{\text{t.p.i. at bobbin}}{\text{t.p.i. at front roll}}$$

or:

$$\text{t.p.i. at front roll} = \frac{\text{t.p.i. at bobbin}}{CF}$$

Now, here's why I have set up these equations.

When you find t.p.i. by the equation, TM $\sqrt{\text{Yarn No.}}$, that t.p.i. is at the bobbin.

When you find t.p.i. by the equation, $\frac{TK}{TG}$, that t.p.i. is at the front rolls.

If we want to find the size twist gear to use on a frame, then our basic equation will be:

$$\text{t.p.i. at front rolls} = \frac{TK}{TG}$$

Using t.p.i. at bobbin, which is the twist we want, then

$$\frac{\text{t.p.i. at bobbin}}{CF} = \frac{TK}{TG}$$

When we solve for the twist gear, we will put a gear on which will give us the actual twist we want less a very small amount due to traveler lag. The same basic principles apply to ply yarns on twisters.

Applications of Twist Principles

Roving

There is no hard and fast rule to tell you how much twist any roving needs. You can fairly accurately estimate the twist multiplier to use, but the final test to determine if you have the right amount of twist is the performance of the roving in the subsequent operation.

Remember that you want the least amount of twist necessary to do the job. Here's why. When you change the twist gear, the speed of the drafting rolls is changed. Lower twist means a larger twist gear and faster roll speeds. Faster roll speeds mean more stock delivered, which gives you greater production. Also, less twist means better drafting in the next operation.

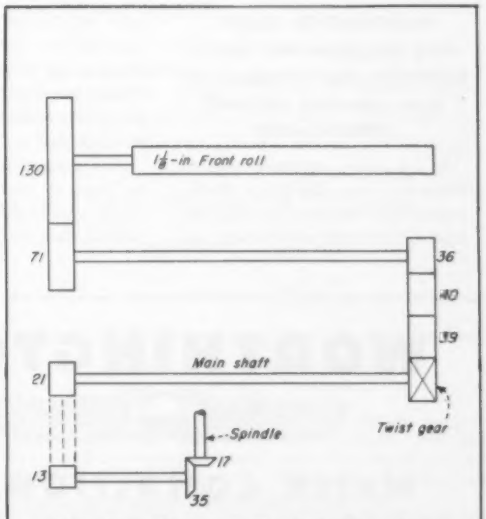
Let's take an example which will show you the procedure to use in setting up the twist on a roving frame.

"Using the diagram given, find the twist gear to use to make a 3 hank roving. The stock is 1-in. carded cotton."

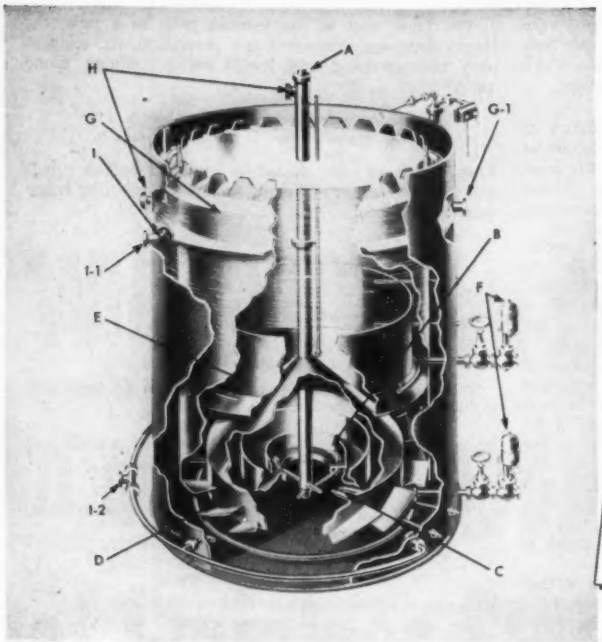
The first thing to do is to estimate the twist multiplier. My experience has been that a twist multiplier of about 1.20 will be right. Therefore, the t.p.i. needed will be:

$$\text{t.p.i.} = 1.20\sqrt{3}$$
$$\text{t.p.i.} = 2.08$$

The twist constant can be calculated by assuming one inch of stock delivered at the front rolls; calculating through the gearing, assuming a one-tooth twist gear, to the front roll; and multiplying by the circumference of the front roll. Here's the equation for this frame:



Roving-Frame Twist Gearing



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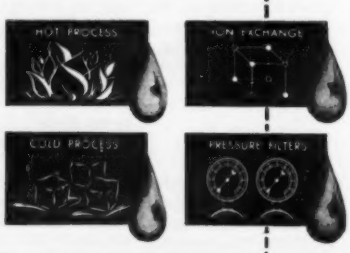


$$TK = \frac{1 \times 130 \times 36 \times 21 \times 35}{1\frac{1}{16} \times 71 \times 1 \times 13 \times 17}$$

$$TK = 62$$

The twist gear can now be determined.

$$TG = \frac{62}{2.08}$$

$$TG = 30 \text{ teeth}$$

A 30-tooth gear should be put on the frame; and the roving checked for performance in running, both on this frame and the subsequent frame.

Yarns

Single Yarns—The appearance and performance of a yarn in its end use are the factors which will finally govern the amount of twist used in the yarn. You can estimate the twist multiplier to use for any given yarn on the basis of past experience, but it may have to be changed to get the exact results you want.

For example, suppose you want to make a 64x62 challis fabric from 1½ den., 1⅛ in. 30s spun rayon yarns. A challis should be soft and supple, and yet have good strength in both warp and filling. I would say that a twist multiplier of about 3.5 for both warp and filling would do the job. Set the frame up on that basis, weave and finish the fabric, and see if it has the characteristics wanted—so far as the effect of twist is concerned.

Once the twist multiplier is determined, here's the procedure to follow to set up the twist on a spinning frame. Let's use an example as an illustration.

"Using the given diagram of twist gearing on a spinning frame, what size twist gear should be used to make a 25s yarn with a twist multiplier of 4.2."

The t.p.i. desired is:

$$\text{t.p.i.} = TM \sqrt{\text{Yarn No.}}$$

$$\text{t.p.i.} = 4.2 \sqrt{25}$$

$$\text{t.p.i.} = 21$$

The twist constant is:

$$TK = \frac{1 \times 84 \times 90 \times 7.53}{1\pi \times 1 \times 27}$$

$$TK = 671$$

I would use contraction with this twist. The C factor can be found from the twist multiplier, as shown in the section on spinning frame draft.

$$CF = \frac{100}{104.8 - (2.6 \times 4.2)}$$

$$CF = 1.06$$

The twist gear then can be found.

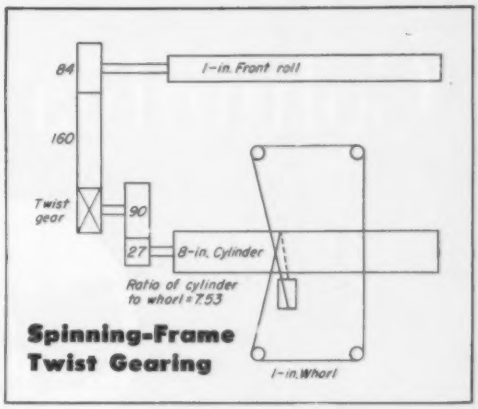
$$TG = \frac{TK \times CF}{TPI}$$

$$TG = \frac{671 \times 1.06}{21}$$

$$TG = 34 \text{ teeth}$$

Ply Yarns—The method used to determine the size twist gear needed on a twister is basically the same as that used for a spinning frame. Contraction in ply yarns cannot be figured by an empirical formula, however, because of the many factors which influence it.

Actually, finding the gear to give the correct twist in a ply yarn is trial and error. The twist multiplier can be estimated on the basis of relative direction of twist in the single yarns, degree of balance desired, amount of twist in the single yarns, and the final effect desired. It is very seldom that you will get the exact ply twist desired from your estimated twist multiplier.



Spinning-Frame Twist Gearing

One very important calculation in ply yarns is the determination of the size single yarns necessary to make a specific size ply yarn.

To illustrate, suppose that you want to make a regular ply yarn with an equivalent single-yarn size of 20s. Would you make it with two ends of 40s? If you did, the equivalent single yarn size would be heavier than 20s. Here's why.

Before the two single ends of 40s are twisted, if you put them together and sized them, the equivalent size would be 20s. When they are twisted together, they contract and the resultant size would be heavier. For example, here is the way to find the size single yarns to use if tests showed that 105 inches of yarn must be delivered from the rolls to make 100 inches of ply yarn.

The weight of one single yarn plus the weight of the other single yarn will equal the weight of the ply yarn. Expressed as an equation,

$$\text{wt.}_1 + \text{wt.}_2 = \text{wt.}_{\text{ply}}$$

Now, yarn number is equal to the number of hanks per pound. A hank can be any unit of length times some constant—for example, yards x $\frac{1}{840}$ with $\frac{1}{840}$ the constant. Also, pounds can be any unit of weight times some constant—grains x $\frac{1}{7{,}000}$ or ounces x $\frac{1}{16}$. The equation for yarn number can then become

$$\text{Yarn number} = \frac{\text{length} \times K}{\text{weight} \times K}$$

or:

$$\text{Weight} = \frac{\text{length} \times K}{\text{yarn no.} \times K}$$

Substituting in the original ply-yarn equation we have

$$\frac{\text{length}_1}{\text{yarn no.}_1} + \frac{\text{length}_2}{\text{yarn no.}_2} = \frac{\text{length}_{\text{ply at rolls}}}{\text{yarn no.}_{\text{ply}}}$$

The constants are omitted from the equation because they would cancel out. With this equation, you can easily find the equivalent single yarn number of the ply yarn, disregarding contraction. Contraction must be considered, however, and it is worked in this way.

The length of the ply yarn in the above equation is the length at the rolls. The actual ply yarn is on the bobbin after contraction. The C factor is a ratio of the two lengths and can be expressed as

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$$CF = \frac{\text{length at rolls}}{\text{length on bobbin}}$$

or: $$\text{length on bobbin} = \frac{\text{length at rolls}}{CF}$$

Substituting, we have

$$\frac{\text{length}_1}{\text{yarn no.}_1} + \frac{\text{length}_2}{\text{yarn no.}_2} = \frac{\text{length}_{ply}}{\text{yarn no.}_{ply} \times CF}$$

Unless you are making a novelty yarn with different rates of feed, all lengths will be the same; and for that reason you can choose any convenient length for calculation purposes.

Now, let's use this equation to solve the problem stated earlier. Our final yarn number is 20s, so let's use a length of 100 for convenience. The C factor will be 1.05.

$$\frac{100}{\text{yarn no.}_1} + \frac{100}{\text{yarn no.}_2} = \frac{100}{40 \times 1.05}$$

Since we are making a regular ply yarn, the size of each of the single yarns is the same, so—

$$\frac{200}{2 \times \text{yarn no.}_{single}} = \frac{100}{40 \times 1.05}$$

$$\text{yarn no.}_{single} = \frac{200 \times 40 \times 1.05}{100 \times 2}$$

$$\text{yarn no.}_{single} = 42$$

Principles of Calculating Production

Production on all yarn manufacturing machines is expressed as the number of pounds produced per hour or in a specific number of hours. Here is a very simple way to calculate your production.

First, get the rate of delivery of the stock delivered from the machine in terms of yards per hour. Then, get the size of the product, at the point you figured the rate of delivery, in terms of pounds per yard.

$$\text{Then, } \frac{\text{yards}}{\text{hour}} \times \frac{\text{pounds}}{\text{yard}} = \frac{\text{pounds}}{\text{hour}}$$

Multiply the pounds per hour by the number of hours you want to use as a standard and by the percent efficiency, and you will have your actual machine production.

Here's how to get the rate of delivery into yards per hour. With a tachometer or through the gearing, find the revolutions per minute of the final set of rolls on the machine. Multiply by the circumference of the driving roll, and you will have the rate of delivery in inches per minute. By simple conversion, get yards per hour.

$$\text{In equation form, } \frac{\text{yards}}{\text{hour}} = \frac{\text{inches}}{\text{minute}} \times \frac{60 \text{ minutes}}{\text{hour}} \times \frac{\text{yards}}{36 \text{ inches}}$$

The products of all machines can be converted from their normal terms to pounds per yard by simple conversion also.

For picker laps,

$$\frac{\text{pounds}}{\text{yard}} = \frac{\text{ounces} \times \text{pounds}}{\text{yard} \times 16 \text{ ounces}}$$

For sliver and sliver laps,

$$\frac{\text{pounds}}{\text{yard}} = \frac{\text{grains} \times \text{pound}}{\text{yard} \times 7{,}000 \text{ grains}}$$

For roving,

$$\frac{\text{pounds}}{\text{yard}} = \frac{\text{pound} \times \text{hank}}{\text{hanks} \times 840 \text{ yards}}$$

$$\left(\frac{\text{pound}}{\text{hanks}} \text{ is the same thing as } \frac{1}{\text{hank roving number}}\right)$$

For yarn, the yarn size is the size of yarn on the bobbin, while the rate of delivery is usually given at the front rolls. It is important that they both be figured at the same place. Then,

$$\frac{\text{pounds}}{\text{yard}} = \frac{\text{pound} \times \text{hank}}{\text{hanks} \times CF \times 840 \text{ yards}}$$

because,

$$\text{yarn no. at rolls} = \text{yarn no. at bobbin} \times CF$$

Application of Principles

Here is an outline of data for each machine used in yarn manufacturing and sample production calculations for each.

Pickers—The delivery point for pickers is at the lap rolls. A known speed is usually the beater speed; and from the beater in the last section, the speed of the lap rolls can be calculated through the gearing or obtained with a speed counter. If a hank clock is used, the hanks per shift, or whatever hours the reading is taken for, must be multiplied by the tension draft between the point of location of the hank clock and the lap rolls to get the rate of delivery at the lap rolls. If you used a hank-clock reading, your equation for finding production would be

$$\frac{\text{pounds}}{\text{shift}} = \frac{\text{hanks} \times \text{tension draft} \times \text{oz.} \times \text{lb.} \times 840 \text{ yd.}}{\text{shift} \times \text{yd.} \times 16 \text{ oz.} \times \text{hank}}$$

If you get the rate of delivery in inches per minute, your equation is

$$\frac{\text{pounds}}{\text{X hours}} = \frac{\text{in.} \times 60 \times \text{oz.} \times \text{hours} \times \% \text{ efficiency}}{\text{min.} \times 36 \times \text{yd.} \times 16}$$

Cards—The rate of delivery is figured at the coiler rolls. Known speeds are usually the speed of the doffer and the speed of the cylinder. You can calculate from either of these points through the gearing to the point of delivery to get the speed of the coiler rolls. To find production after you have the inches per minute of the coiler rolls, the equation is

$$\frac{\text{pounds}}{\text{X hours}} = \frac{\text{in.} \times 60 \times \text{gr.} \times \text{hours} \times \% \text{ efficiency}}{\text{min.} \times 36 \times \text{yd.} \times 7000}$$

Lap Winders—The point of delivery of all lap winders is at the lap drums. The easiest method of getting the rate of delivery is to get the revolutions per minute of the lap drum with a tachometer or speed counter. Multiply by the circumference of the lap drum, and use the equation shown for the cards.

Combers—The point of delivery for combers is at the coiler rolls. A known speed is the cylinder speed; which, in a single-detaching comber, is the number of nips per minute. Go through the gearing from the cylinder to the

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coiler rolls and multiply by the circumference of the coiler rolls to get the inches per minute. Then use the equation shown for cards to calculate production.

Draw Frames—The point of delivery in draw frames is at the calender rolls. The speed of the front rolls is usually known. To get the rate of delivery in inches per minute, start with this speed; calculate through the gearing to the calender rolls; and multiply by the circumference of the calender rolls. Then use the equation shown for cards to calculate production.

Roving Frames—The rate of delivery for all roving frames is expressed as the inches per minute delivered at the front rolls. You can use a speed counter to get the revolutions per minute of the bottom front roll and multiply by the circumference, or you can calculate through the gearing from the main shaft or the spindle—whichever speed is known—to the bottom front roll and multiply by its circumference. You can also get the approximate inches per minute delivered by dividing the spindle speed by the t.p.i., because

$$\text{t.p.i.} = \frac{\text{rpm. of spindle}}{\text{in. per min. of front roll}}$$

The production of roving frames is usually expressed as pounds per spindle per hour, and can be found with the following equation.

$$\frac{\text{pounds}}{\text{hour}} = \frac{\text{in.} \times 60 \times \% \text{ efficiency}}{\text{min.} \times 36 \times \text{hank no.} \times 840}$$

Spinning Frames—The rate of delivery of spinning frames is expressed as the inches per minute delivered at the front rolls. You can get the revolutions per minute of the bottom roll with a speed counter or tachometer, or through the gearing from the cylinder or the spindles, whichever speed you know. Then multiply the revolutions per minute by the circumference of the bottom front roll to get the inches per minute.

If you figure production from a hank clock on the front rolls, you should know whether or not it is set to take care of contraction. Some hank clocks will register one hank for, say, 890 yards to allow for 840 yards to be wound on the bobbin.

If your hank clock allows for contraction, you can calculate production by the equation that

$$\frac{\text{pounds}}{\text{shift}} = \frac{\text{hanks (lb.)}}{\text{shift} \times \text{yarn no. (hanks)}}$$

If the hank clock does not consider contraction, then you must figure in the contraction.

$$\frac{\text{pounds}}{\text{shift}} = \frac{\text{hanks}}{\text{shift} \times \text{yarn no.} \times \text{CF}}$$

(yarn no. at front rolls = yarn no. at bobbin $\times$ CF)

If the inches per minute at the front rolls are known, production can be calculated by the following equation:

$$\frac{\text{pounds}}{\text{X hours}} = \frac{\text{in.} \times 60 \times \text{hours} \times \% \text{ efficiency}}{\text{min.} \times 36 \times \text{yarn no.} \times 840 \times \text{CF}}$$

In this equation, the inches per minute are at the front rolls and the yarn number is at the bobbin. Hence, the equivalent yarn number at the front rolls is determined by multiplying by the C factor.

Production Constants

You can set up your own production constants to meet your specific requirements. The purpose of any constant is to save work in making calculations.

Normally, a production constant is calculated as the production in pounds per hour or number of hours used as a standard, assuming one in place of a variable factor affecting rate of delivery, and assuming one unit of the size of the product.

If the efficiency is not likely to change with a change in rate of delivery or size of product, the constant is calculated at the calculated operating efficiency. If, however, changes in speed or size of product will affect efficiency—such as on a spinning frame—the constant is usually calculated at 100% efficiency.

Machinery manufacturers give in their technical manuals the variable factors which affect rate of delivery for each type of machine, such as the feed pulley on a picker, doffer speed or production gear on a card, front roll speed on a draw frame, etc.

It may or may not be convenient for you to set up your constants according to their recommendations. You may find it more desirable to set up constants to meet conditions peculiar to your situation.

In any event, basically you want a constant that will enable you to set up your machines to give the desired rate of production with a minimum of calculations.

For example, if you wanted to card some cotton at 10 lb. per hr., what size production gear will you need if you are making a 50 gr. sliver, and the production constant is .006?

$$\frac{\text{pounds}}{\text{hour}} = \text{K} \times \text{production gear} \times \text{gr. per yd.}$$

$$\text{production gear} = \frac{10}{.006 \times 50}$$

production gear = 33.3 (33 or 34 teeth)

On the other hand, you may want to set up your constant for draw frames with only the size of the sliver as a variable. Most manuals list the front roll speed as a variable also, but how often do you change the front roll speed on a draw frame?

On a spinning frame, the degree of contraction changes when the twist multiplier is changed. Therefore, it is possible that you will want to make the C factor a variable in finding your constants for spinning frames, in addition to the front roll speed or the twist gear and the yarn size.

Use common sense and basic principles to set up constants which will do the most for you. Don't just blindly follow a rule or equation because it is published in a book or manual.

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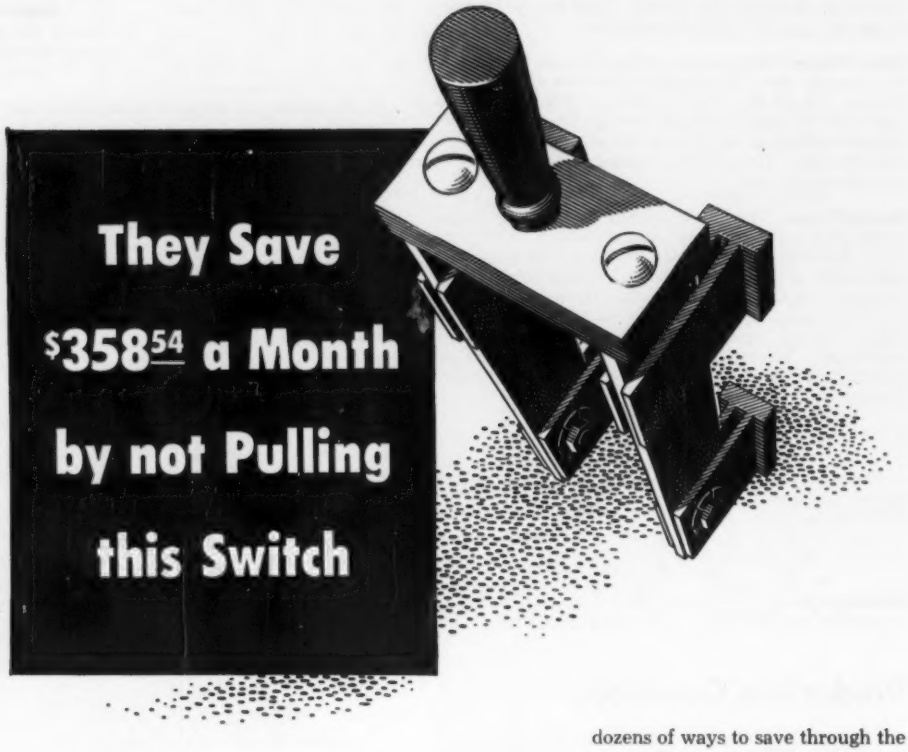

Every day the machinery in a Clinton, Mass. plant* had to be stopped for a half hour while those machines were lubricated. Every stop meant lost production time plus a $14 expenditure for lubrication.

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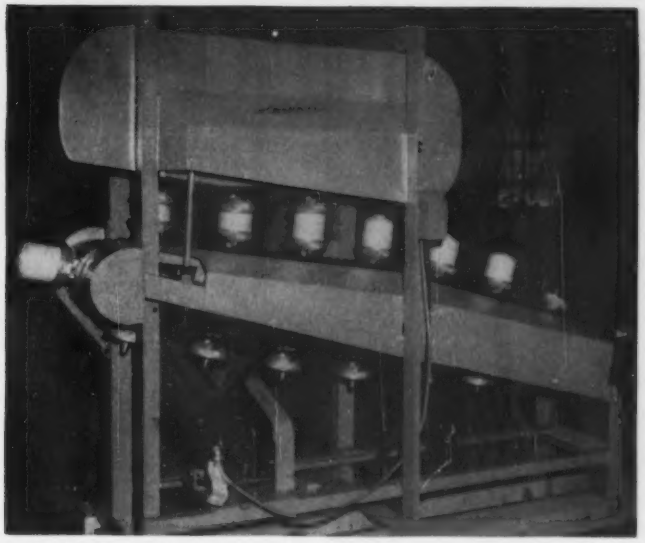
TEXTILE Equipment NEWS



PACKAGES ARE SQUEEZED at the same time that the square edges are rounded in this new yarn-package shaper.

Dye Packages Shaped at 3,000 Per Hr.

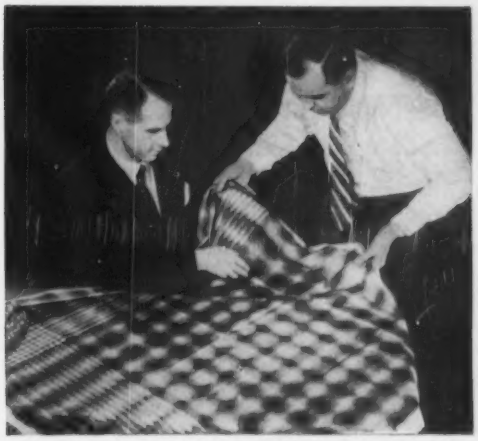
A new high-speed yarn-package shaper for breaking down the hard edges of yarn packages in preparation for dyeing has been developed by Gaston County Dyeing Machine Co., Stanley, N. C. A patent on the new machine has been applied for.

In the new machine, shaper cups move continuously, and it is only necessary for the operator to place the packages in the cups at the rear of the machine. The machine automatically throws out packages after the forming operation. An operator, with the machine, can shape at least 3,000 packages per hr., depending on his speed. It is possible to speed the machine up to 4,000 packages per hr., but experience has shown that this rate is too high for the average operator.

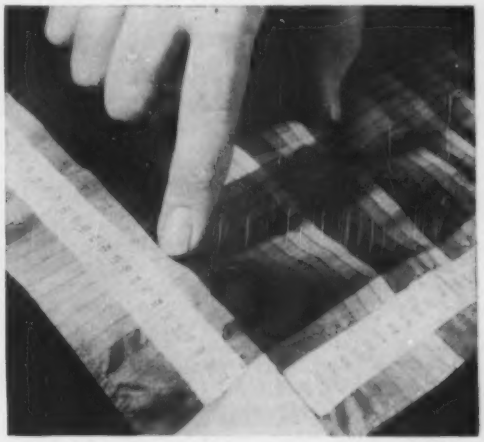
Besides shaping the square hard edges of the package, the machine progressively squeezes the entire package from both ends. This squeezing action is said to make the density of the entire package uniform, an important factor in obtaining even dyeing throughout.

The machines are available for 1¼-lb. packages wound on ⅝-in. or 1⅝-in. dye tubes. They are also available for 1¾-, 2-, and 2½-lb. packages wound on 1⅝-in. diameter dye tubes.

Woven Silk Color Card Has 15,000 Colors



A WOVEN COLOR CARD made of silk fabric and containing about 15,000 different shades is demonstrated to TW's Bill Newell (right) by Walter Aebli of Walter Aebli & Co., manufacturer, Schuetzengasse 21, Zurich, Switzerland.



THE FABRIC has ¼-in. squares of color formed by 237 ¼-in. bands of differently colored yarns in both warp and filling. Colors in the fabric can be identified by numbers along each edge of the fabric. Larger fabrics, with ¾-in. squares, are also available.

THE ROTAFIL, shown here in conjunction with the Brush uniformity analyzer, measures evenness of low-twist filament yarns by twisting the yarn within the pick-up element. The device can be adapted for use with at least three yarn-evenness testers commercially available.

Device Measures Evenness of Low-Twist Filament Yarn

A new device, called the "Rotafil," has been developed by Textile Research Dept., American Viscose Corp., Marcus Hook, Pa., to measure accurately the evenness of low-twist filament yarns. Heretofore, yarns of low or zero twist could not be accurately measured, both because they tended to flatten as they passed over the guides, and because their shape varies naturally from circular to flat. As a result, conventional measuring devices record the silhouette rather than the linear density of the yarns.

The Rotafil unit twists and rotates the yarn as it measures it, then removes the twist. This twisting is done by use of a simple false-twisting tube with accurate guides. In this way, the form factor is eliminated by increasing the number of flats and edges in the pick-up area and by keeping the number constant through rotating the yarn on its axis.

The Rotafil may be used in combination with various electronic variable-capacitance and dielectric-resistance amplifiers. It is suggested that the electronic amplifiers be selected according to the requirements of the pick-up and recorders used. Most amplifiers provide varying degrees of magnification on the chart, and some also supply a choice of pen dampening.

Conventional twisting spindles may be used, but a simple false-twisting tube with accurate guides to center the rotating yarn within the pick-up slot and to reduce balloon formation to a minimum has proved adequate. This method eliminates the form factor in three ways—by maintaining an essentially constant number of flats and edges within a pick-up area, by increasing the number, and by rotating the yarn on its axis.

The device is applicable to at least three makes of testers: the Uster evenness tester, the Brush uniformity analyzer, and the Serc electron micrometer.

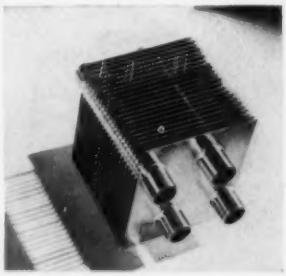
Rotafil is being offered to the textile trade on a non-exclusive royalty-free basis as a contribution of American Viscose Corp. toward the maintenance of quality standards in the textile industry.

Heat Exchanger Has Corrosion-Resistant Construction

An improved heat-exchanger unit specially developed for textile-industry application and which requires no welding or soldering in the assembly has been developed by The Carpenter Steel Co., Alloy Tube Div., Union, N. J.

The corrosion-resistant assembly has a mechanical joint, and requires no bonding agent; thus maximum strength at the joint is assured. The manufacturer also claims the joint will successfully withstand repeated expansion and contraction caused by heating and cooling cycles.

In making the exchanger, $\frac{3}{8}$ x 0.049-in.-wall stainless tubing is mechanically bonded to flat plate-type fins of stainless steel. The fins are stamped and belled, and a bonding collar is formed at each opening. The collar provides a broad, flat surface instead of a sharp edge at each point of contact with the tube. A tool-steel bullet, propelled by compressed gas, is forced through the stainless tube, and the tube is thus expanded uniformly against the continuous surface formed by the collars of fins of the heat exchanger.



MECHANICALLY FORMED JOINTS between stainless-steel tubes and fins in this heat exchanger are said to assure maximum strength and to eliminate welding.

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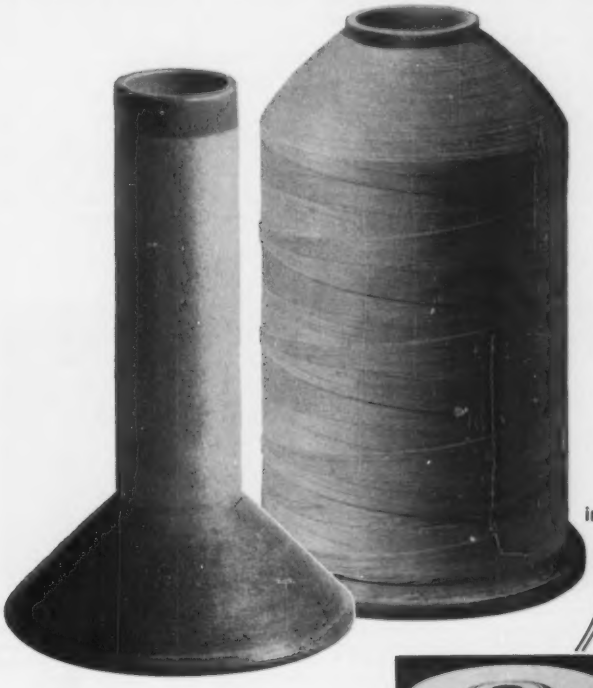

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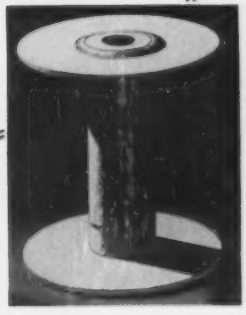
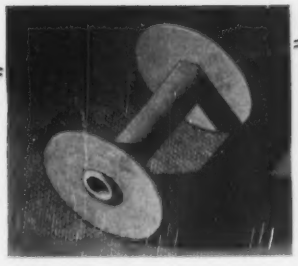


F. F. M.—for winding braid, tape and cord. Features metal reinforced bushing.



BIAS—for winding light packages of bias binding and narrow tape. Crimped end construction.

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DEPENDABLE SOURCE OF SUPPLY

Cloth Singer Has Gas-Mixing Carburetor

New radiant-flame compression singeing equipment has been developed by C. M. Kemp Mfg. Co., Baltimore, Md. Designed to fulfill a need for better and faster singeing of fabrics, the equipment is recommended for acetates, broadcloth, damasks, drills, mohair, rayon twills, velours, and mixture goods, as well as fabrics used for sheeting.

In radiant-flame compression singeing, the singeing flame is pushed down and confined by the fabric. The cloth forms one side of a combustion chamber solidly filled with flame under pressure. This combustion chamber is said to contain no excess oxygen. The nap is not burned, but is carbonized and carried away by escaping combustion gases. It requires only 1/15 to 1/25 of a second for the cloth to travel over the burner—a split-second contact which is said not to harm the body of the cloth.

The Kemp singeing installation embodies a series-S industrial carburetor. Designed by Kemp, this unit completely and accurately pre-mixes gas and air, and is unaffected by variations in feed-line gas pressure or by a change in demand from the burners. The carburetor is equipped with approved safety devices, including a flash-arresting unit. Once set to correct ratio, the carburetor can be locked at that setting, and need not be adjusted again, the company states. Excess oxygen, a cause of scorching and burning, is said to be eliminated from the combustion area.

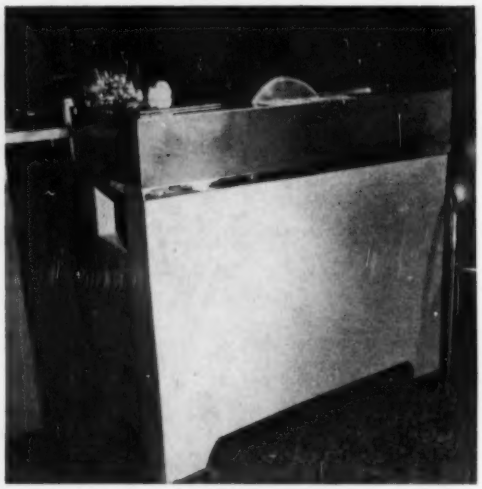
Burners are supplied in standard flame lengths, with the over-all length of the burner 2 in. longer than the maximum flame length. Accessories include, in addition to the carburetor, a lighter burner, index cock, fire check, and pillow blocks. Accessories are furnished with the machine.

New Laboratory Equipment Featured at TRI Exhibit

THE AREALOMETER, an instrument used to determine fineness of cotton fibers, has been adapted to measure fiber maturity by Special Instruments Laboratory, Inc., 1003 Highland Ave., Knoxville, Tenn. The instrument gives a reading which can be used to classify bales by fiber maturity.

RADIOACTIVE TRACERS and instruments shown above are used by U. S. Testing Co., Hoboken, N. J., for measuring dye penetration and removal of dyestuff in laundering, for measuring migration and/or coverage of fabric by various finishes, and for measuring cotton-fiber maturity as well as uniformity and durability of fabric coatings.

NEW GAS CHAMBER for testing gas fading of fabrics was shown by U. S. Testing Co., Hoboken, N. J., at recent exhibit at TRI annual meeting. The chamber accelerates gas-fading tests, runs at a higher temperature, and is more compact than previous units.



A FIBER BLENDER for making a thoroughly blended composite sample of many individual fiber samples taken from bales was shown by U. S. Testing Co., Hoboken, N. J. One or two passes through the machine can be made very quickly.

Unusual Strength

You can depend on Textile Spring-Beard Needles for the unusual strength required in high-speed knitting operations. They are strong at the beard, strong at the butt, strong at the shank . . . strong at *every* crucial point.

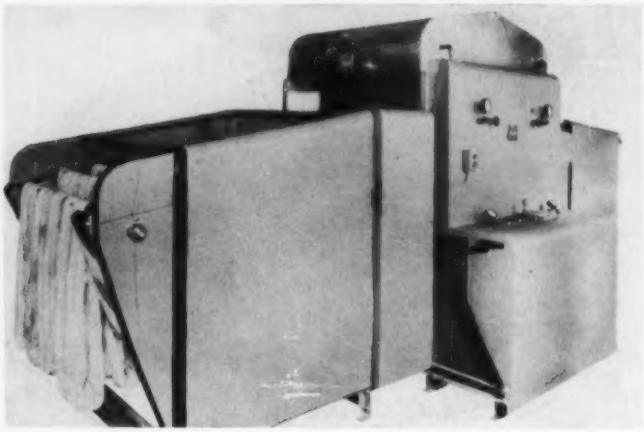
Strength is just one of the many advantages you get in Textile Spring-Beard Needles. A special steel formula, superior tempering and scientific controls —automatic and electronic—give you longer-lasting needles, better hosiery fabrics and bigger profits.

TEXTILE MACHINE WORKS, READING, PENNA.

Textile
SPRING-BEARD NEEDLES

For Full Fashioned and Warp Knitting

For more information, write direct or use Reader Service post card.



***SPEED OF SKEIN CARRIERS** in the conditioning section of this skein-conditioning machine is five times the speed of carriers in the feeding section. This feature insures uniform conditioning of all skeins.*

Skein-Conditioning Machine Has Flexible Production

A new skein-conditioning machine, model S-3, has been developed by Kearny Mfg. Co., Inc., Kearny, N. J. Skeins to be conditioned are placed on metallic tubes or wood bars as they come from the dryer, and are placed on a loading frame. Conveyor chains with bronze carrier links lead the tubes or bars to the spray area where the conditioning takes place. Conditioned skeins are automatically transferred to the delivery frame of the machine, from which they are removed by the operator.

Operation of the machine is very flexible. A feed control with an approximate ratio of 1 to 4 makes it possible to pass from 7 to 28 carrier bars through the machine per minute. If each bar carries 4 lb. of yarn, 28 lb. per min. can be treated at the slow speed, or 112 lb. at the high speed. Calculated hourly production varies from approximately 1,700 to 6,799 lb.

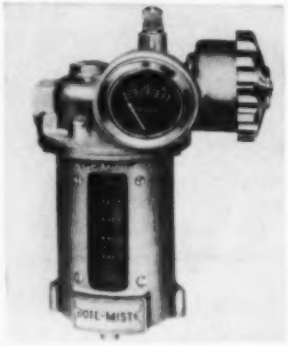
The ratio of speeds between the feeding and conditioning conveyors is 1 to 5. In other words, whenever the feeding conveyor travels 1 ft., the conditioning conveyor has traveled 5 ft. This speed difference causes the carrier bars to pass through the conditioning chamber with sufficient distance between each other to allow a uniform coverage of all skeins. The slow-moving feeding conveyor also gives the operator ample time to keep the loading frame filled.

Four batteries of atomizing nozzles provide for humidifying the skeins. The orifice sizes of the nozzles can be changed to suit any requirements for different types of yarns. Each of the four rows or batteries of nozzles can be adjusted individually by means of needle valves to give the required density of spray. All four-nozzle batteries can be regulated collectively through by-pass valves. Individual pressure gages show at a glance at what pressure the respective manifold of nozzles operate.

Total floor space occupied by the machine is 15 ft. 10 in. in length, 6 ft. 6 in. in width.

Availability: 3 to 4 months.

Oil Mist Keeps Bearings Cool, Saves Oil



***THIS MACHINE**, in a test extending over several months, used but 1 oz. of oil for each 8 hr. of operation, drawing less than 1 cu. ft. of air per min. at 10 psi.*

Oil Mist, a system of constant and automatic delivery of lubricating oil to all types of machine bearings in "air-borne" microscopic particles through tubing, is now available from Alemite Div., Stewart-Warner Corp., Chicago, Ill. Pilot units of the system were first introduced to the textile industry at the American Textile Machinery Exhibition.

Virtual elimination of the human factor in lubrication, drastic economy in lubricant consumption, and prolonged bearing life are claimed for the system as advantages over other lubrication methods. In addition, reduction of bearing temperatures, permitting stepped-up machine speeds; prevention of product spoilage by complete elimination of drippage; and elimination of machine down-time for lubrication are claimed for the system.

Both coolant action and protection against dust and abrasives on bearing surfaces are said to be provided by the machine. The cooling action arises from two conditions. One is application of just the right amount of oil, because the bearing governs the amount of oil used, thus preventing fluid friction. The second is the passage through the bearing of the air which delivers the mist.

The Oil-Mist lubricator, attached to each machine, is slightly smaller than the oil filter on a passenger automobile. In operation, there are no moving parts. Only two controls are used: one, a built-in air-pressure regulator, the second, a needle-type valve which controls the flow of oil. The lubricator, by mixing air and oil, converts oil to mist form. A baffle plate separates out large droplets. Only a mist which resembles cigarette smoke passes through the lines. Oil particles are so fine that they cannot be detected in the mist even by ultra-violet light.

In operation of the new-type lubricator, dry, clean air must be used. Alemite has provided a new water separator, self-emptying without interruption while in use, to assure dry, clean air for the system. This separator removes 98 to 99% of moisture from the air, company engineers assert.

The new lubricators are available for use with any mill air line. Maximum air consumed is approximately 1 cu. ft. per min. A similar lubricator with built-in compressor is planned.

The Oil-Mist system is rated at 30 bearing inches per lubricator unit, the maximum number of bearings not to exceed sixty. In one application, one unit will lubricate twenty points.

How is Quality Measured?

Because of today's uncertain world conditions, your textile equipment may again have to be put to work on emergency schedules. The measure of its quality may be its ability to operate for long, continuous periods at peak production.

We invite your comparison of the Van Vlaanderen INSPECTALL with competing makes. The INSPECTALL has been purposely engineered to outlast and out-perform them all. Compare its features, point by point, as shown in the column at the left.

COMPARE

these features with those of any other make

- **Built to a precision and sturdiness not before available.**
- **Exclusive design, one-station group control for easier, faster operation.**
- **Wide-range, variable speed control at operator's finger tips.**
- **Instantly reversible, one motion clutch control, hand operated from any examining position.**
- **Let-off tension arrangement controlled from front of machine.**
- **Any fabric can be examined face or back because take-ups operate clockwise or counter-clockwise.**
- **Center bar quills are ball-bearing mounted with opposite end equipped with new, Van Vlaanderen positive center-bar lock.**

This new, superior examining machine will handle rolls up to 36" in diameter. Examining board is 36" high in widths for 60" and 70" cloth. Special widths available. Machine is equipped with precision clock, measuring yards and eighths from shell to shell. Attachment (optional) available for running tube to tube or shell to tube.

The INSPECTALL is equipped with ball bearings throughout . . . sealed in for life. Drive is completely enclosed. Oversize dry disc clutches. Hard chromium-plated guide rolls.

You are invited to see this quality machine. We also make a tubing and measuring machine, a combination tubing and doubling machine and a roll make-up beaming machine.

VAN VLAANDEREN INSPECTALL

VAN VLAANDEREN MACHINE COMPANY

You are invited to see this machine.

370 Straight Street, Paterson 3, New Jersey

Cable address: VLAANDEREN, Patersonnj, U.S.A.

World's largest manufacturer of machines for processing modern fabrics

USE OF TRANSFER ROLLS and heat is eliminated by this welt-printing machine. The imprint produced is said to be permanent to handiing, stretching, and washing.

Welt Imprint Will Not Wash Out

The Perma-Printer, a new welt-printing machine which produces a permanent mark on welts that is resistant to handling, stretching, and washing, has been developed by the Perma-Print Co., 1510-1512 Central Ave., Chattanooga, Tenn. The permanent imprint made by the machine is said to be able to carry much more information than practicable with heat transfers. No heat is used in the imprinting method, transfer rolls are eliminated, and the flexibility of the method permits changing of brands or color names, as desired, rapidly and easily, as often as such changes are required.

The Perma-Printer is said to save at least $5 per thousand dozen prints in direct labor and material costs. A further saving lies in the freedom from large inventories of roll transfers.

The Perma-Printer, which occupies a floor space of 3x4-ft., is a motor-driven machine mounted on a table, so arranged that the operator works her trays of goods most conveniently. The operator sets each bundle of hose in front of the machine and folds all the welts of the bundle back, as a unit. She then hinges each welt (or two, if printing only one of each pair) forward upon the machine platen at the machine speeds. Each welt or pair drops out of the way after printing, by action of the platen. When the bundle is finished, the operator simply sets it on the finished tray. She does not separate or handle individual hose or pairs beyond feeding the welt only, a factor which assists in maintaining a high production rate. The machine inks itself automatically, needs no attention until a change in mark is required. When a change is desired, the operator exchanges printing slugs in a matter of seconds, and starts a new lot.

The speed of the machine is variable, to suit the operator. By depressing a foot pedal and releasing it, prints may be made at will, one at a time. By holding down the control, the machine is allowed to operate continuously at any pre-determined speed, which can readily be changed. Very little training is said to be required for satisfactory production, and a speed of 800 doz. prints a day is said to be easy for most operators after a few days' experience.

Floor Maintenance Compound Holds Dust Down

THE HAND at left was rubbed across an ordinary untreated floor. The hand at right was rubbed over a section treated with the new dust-controlling product which leaves a protective film that seals out subsequent dust and dirt.

A new method of floor care which holds dust down through use of Antiseptic Westone has been developed by the West Disinfecting Co., 42-16 West St., Long Island City 1, N. Y. The compound has been undergoing a year of actual field testing on a large commercial scale in industrial plants and in all types of buildings.

The West company claims management has found that use of Antiseptic Westone has resulted in reduction of dust damage to machinery, instruments, materials, and products during manufacturing operations and storage; less absenteeism; economical restoration of floors to their original beauty; a reduction in maintenance costs; and in generally increased sanitary conditions.

It has been definitely established, the company states, as a result of extensive research by many public-health services and private institutions, that one of the best ways to prevent cross-infection among plant personnel, especially where people are crowded into relatively small areas, is to keep the air as free from dust as possible. Dust is caused primarily by floor traffic and sweeping operations.

Antiseptic Westone is formulated for preservation of floor surfaces, enhancement of floor beauty, and elimination of dust. It is said not only to remove dust from floors, but to leave an antiseptic film which inhibits the growth and multiplication of the bacteria present. Its surface-sealing film holds down subsequent dust for quick and easy removal.

This sealing action is of particular value in connection with new concrete and wood areas, which, unless properly treated, give off dust long after they are laid. When these untreated areas are of considerable size, they can exude so much dust that they can clog air-conditioning ducts and put the systems out of commission.

Antiseptic Westone is economical and easy to apply. One gallon covers 4,000 sq. ft. of floor surface. The product is stainless and can be applied to use with a rag, mop, or by spraying. Floor maintenance cost reductions up to 50% are said to have been realized.

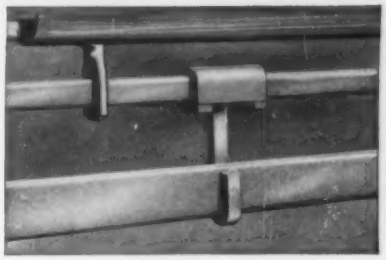
NEW! WALKER FREE RIDING SLIDE HOOK

Gives longer rod life—Better fabrics

New Free Riding Slide Hook for silk type frames makes warps fully self adjusting for high sley fabrics, brings you these four advantages.

- Makes Warp Self Adjusting
- Does Not Angle or Bind
- Lower Cost—Less Labor—Longer Life
- Improved Fabric Quality—Free From Streaks

Write Walker today, Dept. TW-2 for descriptive literature and free samples.

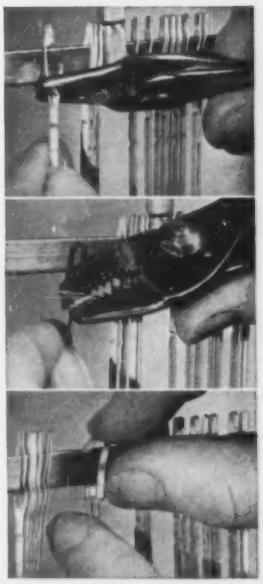


NEW! WALKER LOCK-ON* HEDDLE REPAIR

fast, low cost

JUST 3 EASY STEPS

Walker "Lock-On"* Heddle Repair offers real savings through reduced down time, faster repair and low initial cost (about ½ to ¼ cost of old style repair heddles). In these 3 quick easy steps, the repair can be made without disturbing the warp. No need to break ends—no chance to soil the warp. All you do is:



1. Break off the broken end loop at the exact bottom with a pair of pliers.
2. Insert the heddle shaft into the Walker Lock-On Repair Head and fold over clip and tongue. This locks the head securely on the shaft.
3. Slip loop over heddle rod and re-start the loom. This entire operation takes only one-third the time per end required for the old method.

FOUR SIZES COVER ALL NEEDS! The heddle wire size, not the length, determines the repair head you need. Three sizes cover all but the very heaviest gauge heddles. So you've no inventory problem with Walker Lock-On. Write for free samples and descriptive literature on Walker Lock-On. Send sample heddle for size—Walker Dept. TW-2.

See these new Walker developments on the stage at the Greenville Textile Show . . .

*Fully protected by patents applied for.

WALKER
MANUFACTURING COMPANY, INC.
ATLANTIC & RUTH STS., PHILA. 34, PA.
HEDDLES • HEDDLE FRAMES • REEDS

Hygrometer Has Highly Sensitive Sensing Element

SMALL SENSING ELEMENT of new electronic hygrometer has gold-leaf electrodes pressed into a plastic base. The entire element is coated with a thin solution of chemical salts, the conductivity of which varies with relative humidity.

A new electronic hygrometer for measuring and controlling industrial air conditioning has been developed by Brown Industrial Div., Minneapolis-Honeywell Regulator Co., 4468 Wayne Ave., Philadelphia, Pa. A number of the controllers, operating under tests in several Southern textile mills, are said to have reduced yarn breakage and to have materially improved the quality of finished products.

Part of the new instrument is a sensing element which is about the size of a match-book cover. The element consists of a clear plastic base on which are mounted conducting electrodes which look like the teeth of a comb. The electrodes are made of pure gold leaf and are pressed onto the surface of the plastic base. They are separated from each other about like the teeth of two interlocked combs. The entire element is coated with a thin solution of chemical salts.

In operation, the sensing element determines the amount of moisture in the air by measuring a minute sharp change in electricity carried by the salts between the teeth of the electrode.

The salt film carries a higher current as moisture increases. The electric change in the element is amplified through electronic tubes. The amplifier of the system operates equipment to add or to take moisture from the air in accordance with the humidity desired. The controller can also be connected to indicating and recording instruments to show visibly the humidity at all times.

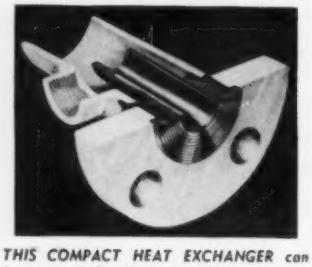
The system provides for direct relative-humidity reading without assistance of psychrometric charts. It can be used to sense changes between the limits of 20 and 93% relative humidity, and has a minimum span of 20% relative humidity throughout its range. All ranges are available with full temperature compensation between the limits of 50 to 120° F.

The ability of the system to provide remote reading gives three advantages. (1) It will operate over distances up to 1,000 ft., making possible centralized control of a complete installation from a supervisory panel. (2) Unit control is available adjacent to the critical zone being controlled. (3) Remote transmission allows supervisory monitoring of multi-unit, single-zone control.

The instrument is calibrated to plus or minus 1% accuracy, allowing relative humidity to be held within closer tolerances than previously possible. Responsiveness of the sensing element is much greater than "dimensional-change"-type hygrometers; 63% of total change is registered in 10 sec. Minimum maintenance is featured because of complete air filtration and elimination of psychrometric accessories. Installation is simplified because water lines, wicks, porous tubes, and accessories are eliminated. Centralization of instruments provide single-location supervision over remotely located multi-zone measurements.

The system will be available for delivery next month.

Corrosion-Resistant Heat Exchanger Has Low-Cost Design



THIS COMPACT HEAT EXCHANGER can be mounted directly in installed piping systems.

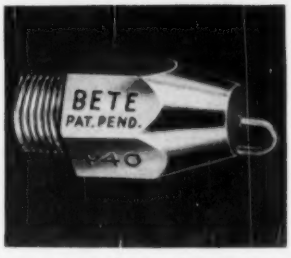
A new heat exchanger developed by Martin-Quaid Co., 1886 Sedgely Ave., Philadelphia 32, Pa., is designed to provide corrosion resistance at a fraction of the cost of conventional alloy-metal units.

In the Econalloy design, corrosion-resistant materials are used only where required, as flange inserts and for the inner tube which contacts the fluid or vapor being heated. A corrosion-resistant joint is made without welding to the inner tube. The alloy inner tube is expanded into prepared serrations in the I. D. of the insert flange by special torque-limit tools which prevent undesirable stresses. A positive joint is formed without the application of heat which would change the grain structure of the alloy and lower corrosion resistance.

The Econalloy heat exchanger is also designed to provide uniform heat over the full surface from flange to flange without dead spots. The exchanger also saves space because it forms an integral part of the piping system. It can be supported vertically or horizontally along a wall, or on hangers. Used singly or in groups, Econalloy heat exchangers are easily demounted for cleaning; and it is a simple matter to add additional capacity as needed.

The Econalloy line is furnished in sizes from a fraction of a square foot of heating surface to several hundred square feet, in lengths up to 30 ft. per segment. Integral tube sizes range from ¼ to 4 in. Standard units are available for pressures up to 900 psi., and temperatures in excess of 700° F.

Humidifier Nozzle Produces Fine and Uniform Droplets



EXTREMELY FINE and uniform fog droplets at low operating pressures are claimed for a new line of low-gallonage nozzles by the manufacturer, the Bete Fog Nozzle, Inc., Greenfield, Mass. Employing the pin-jet-impingement principle, the new nozzles have no internal parts and cannot clog with foreign particles smaller than the orifice size, according to the manufacturer. A new pin design reduces interference of the pin with the fog pattern. The new Bete nozzles are made in 10 orifice sizes, from 0.015 to 0.080 in. diameter, with flow rates from 1 to 100 gal. per hr.

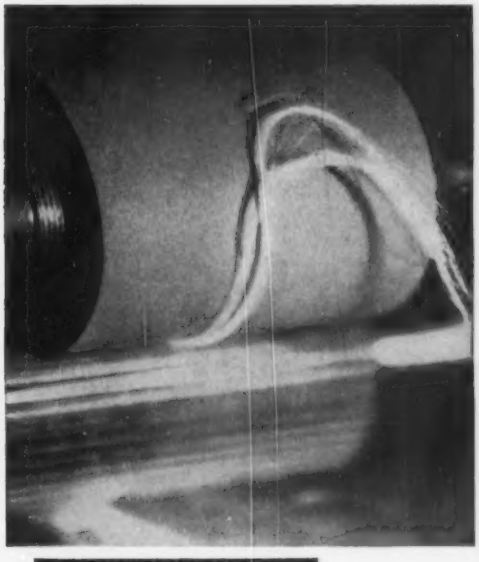
Basic cause of lapping eliminated by this patented compound

There's an exclusive difference in Armstrong's Accotex® Cots. These synthetic covers are compounded with certain electrolytes which counteract the normal attraction between fiber and cot. Accotex Cots actually tend to repel broken ends, as the diagrams below show.

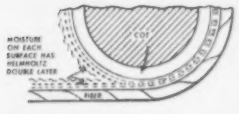
High lap resistance, however, is only one of the Accotex advantages. Another is the tough synthetic rubber compounds from which these roll coverings are made. Accotex compounds aren't affected by oils, dyes, or commonly used textile solvents. They won't sweat and they won't flatten during shutdown periods. Cots made from these Accotex compounds take months of front-line service without perceptible wear. As a matter of fact, mill after mill is getting five to six years' spinning from its Accotex Roll Coverings.

Since spinning conditions differ from mill to mill, Armstrong offers a complete line of specialized Accotex Cots. Whether you are spinning cotton, wool, or synthetics, you can get a lap-resistant cover especially formulated for your type of job from Armstrong. They are made in straight rubber compounds as well as cork-and-rubber combinations.

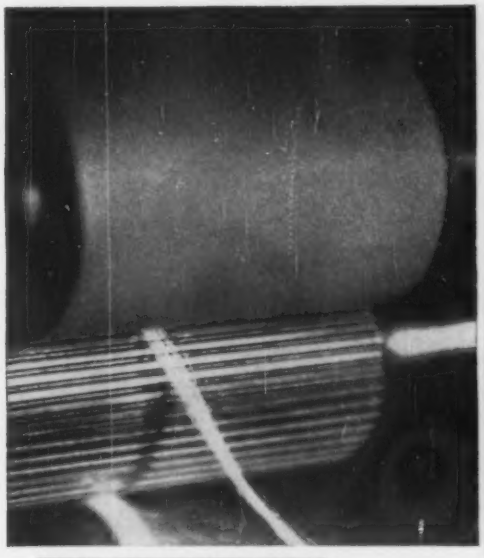
For a trial installation, call your Armstrong representative or write Armstrong Cork Company, Textile Products Dept., 8301 Arch St., Lancaster, Penna. Available for export.



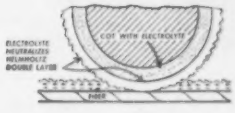
THIS COT LAPS



THIS COT LAPS. Moisture layers on fiber and cot contain electric charges that attract fiber to cot. When pressed together, the two moisture layers have an adhesive effect.



THIS COT DOESN'T LAP



THIS COT DOESN'T LAP. Electrolyte incorporated in patented Accotex rubber composition neutralizes electric charge in moisture layer on cot. This eliminates adhesive effect.

ARMSTRONG'S ACCOTEX COTS

Electronic Let-Off Eliminates Tricot Shade Marks

The first of two electronic let-off controls, newly developed by General Electric Co., Schenectady, N. Y., for tricot-knitting machines, has been installed at Van Raalte Co., Inc., Saratoga Springs, N. Y. The new device enables the mill to produce a better grade of knitted goods than was possible with mechanical controls, according to Van Raalte engineers.

Designed to eliminate shade marks caused by short-time variations of yarn tension and to give better control over "runner" length, the let-off control will provide stopping without marks.

A typical tricot-type knitting machine produces flat fabric, 168-in. wide. Usually two beams in a 168-in. width machine, each containing 4,704 ends of yarn full gage down to 2,352 ends half gage, are the source of yarn fed into the machine.

The principle of operation incorporated in the G-E design and the high sensitivity of the control are said to render it unaffected by the mechanical variations in previously used brakes. The electronic control system utilizes a locking worm gear in place of each brake. The electronically controlled rotation of a small motor on each worm regulates the pay-off of yarn from each beam. The control signal is obtained from a position-sensing selsyn attached to the pivot shaft of each tension bar.

Cake Holder and Flyer Increase Winding Production

An expanding cake holder, together with a suitable flyer developed by Manchester Metal Work Ltd., 368 Bury New Rd., Salford 7, Manchester, England, is said to provide an average increase of 27½% in the poundage of yarn wound per week as compared to previous methods.

The increase in output is attributed to the rapid method by which the expanding holder can be closed, placed in a new cake, and opened up; the quick method by which the assembly can be mounted on the flyer; and the gentle unwinding action of the flyer which prevents every turn of the yarn being dragged over those adjacent to it. The latter feature is also said to result in a lower percentage of breaks.

The holder can be closed with one movement of the hand and is ready for further use immediately. The flyer is provided with a threaded portion at one end, 1 in. long, complete with nut, so that it may be mounted vertically, horizontally, or at an angle on wood or metal bars by drilling a single hole. The flyer portion itself is hardened and runs on two ball races.

Components are very easily taken apart if desired, and all parts are said to be practically indestructible. The end of one of the spring-steel wire arms is provided with a coupling piece and a figure-8 eyelet, all of which are adequately protected and held in position by a light rubber sleeve.

The over-all length of the center spindle of the cake holder is 7 11/16 in., which allows about 11/16 in. of spindle to project at each end, so that the holder may be mounted, if desired, in slots on a winding machine. When closed, the holder may be introduced into a hole 1¾ in. in diameter, but will expand at its maximum to 6 11/16 in. diameter. The L-shaped supports for the cake itself are 5¾ in. long on the parallel and ¾ in. deep on each leg. Special L-shaped supports can be provided for larger cakes.

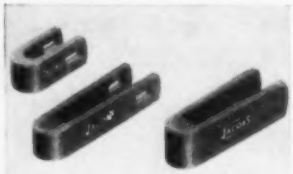
Polyethylene Lining Is Chemically Inert

A removable, chemically resistant, light-weight, polyethylene lining which can convert tanks, drums, and crocks into efficient, chemically inert containers has been developed by Enley Products Inc., 254 Pearl St., New York 7. The new linings have high tensile strength, and will remain flexible at temperatures as low as 40° F. below freezing, and as high as 180° F. Chemically, they possess high resistance to mineral acids, alkalis, alcohols, radioactive materials, oxygenated solvents, hydrofluoric acids, etc.

Use of the liners is said to save labor and transportation because of the removable feature. Tanks and drums are converted at the plant site into chemically resistant processing tanks, experimental tanks, storage tanks for chemicals and solutions, containers for moving of wet goods around the plant, and other uses.

The liners are available in 4-, 10-, and 15-mil. thicknesses. Drum and crock liners are mass-produced, and tank liners made to order. Drum liners come complete with double-rim protection; round, contoured double bottoms; cover; and maintenance kit. Liners are available for 55-, 32-, 15-, and 5-gal. drums, and 30-, 15- and 5-gal. crocks.

Lug-Strap Uniformity Said to Assure Better Weaving



***NEW LUG STRAPS** of rubber-and-cotton-fabric composition are said to provide longer service.*

A complete line of rubber-and-cotton-fabric composition lug straps has been developed by The Bullard Clark Co., E. H. Jacobs Northern Div., Danielson, Conn.

These straps, called Jacobs Verybest Rubberweld lug straps, have been tested in numerous installations over a long period and are said to have been proved successful and superior. Because of the molded construction of the lug straps, they are more uniform than other straps made of rubber and fabric. When installed on a loom, their uniformity is said to provide stable pickling action; and their molded construction assures fewer loom adjustments and longer uninterrupted service.

Starter Enclosure Is Smaller, Safer

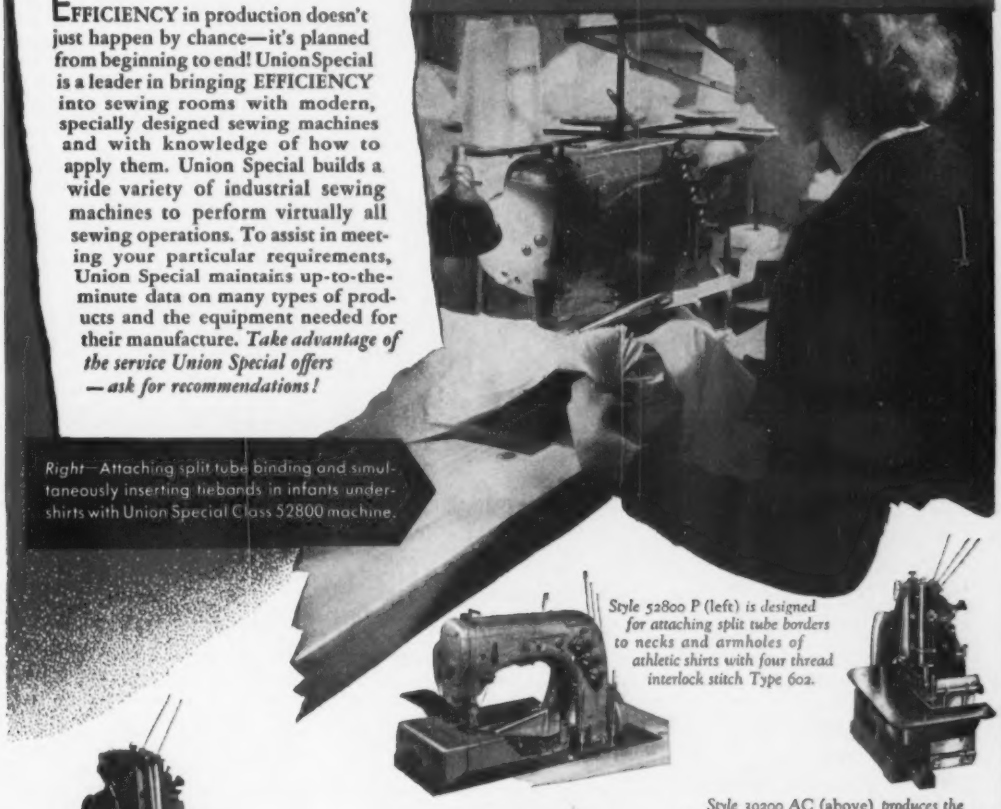
A new combination Life-Linestarter, class 11-206-N, which combines motor starter, motor protection, and disconnect in a redesigned enclosure to save space and to increase safety, is now available from Westinghouse Electric Corp., 306 Fourth Ave., Pittsburgh 30, Pa.

Designed for across-the-line starting of squirrel-cage induction motors, or as a primary switch for wound-rotor motors, this unit features the new Life-Linestarter, AB de-ion circuit

Textile Equipment News
(*Continued on page 196*)

Leading the way to Efficient Production!

EFFICIENCY in production doesn't just happen by chance—it's planned from beginning to end! Union Special is a leader in bringing EFFICIENCY into sewing rooms with modern, specially designed sewing machines and with knowledge of how to apply them. Union Special builds a wide variety of industrial sewing machines to perform virtually all sewing operations. To assist in meeting your particular requirements, Union Special maintains up-to-the-minute data on many types of products and the equipment needed for their manufacture. *Take advantage of the service Union Special offers —ask for recommendations!*

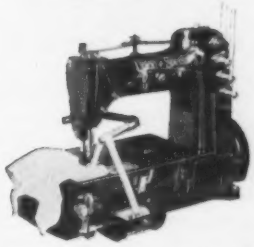


Right—Attaching split tube binding and simultaneously inserting tiebands in infants undershirts with Union Special Class 52800 machine.

Style 52800 P (left) is designed for attaching split tube borders to necks and armholes of athletic shirts with four thread interlock stitch Type 602.

Style 39200 AC (above) produces the Union Special "Purl-Rite" finish for fine quality seaming of knitted undergarments.

Style 39200 AS (above) is especially designed for blind stitch welting or hemming of knit goods. Cantilever throat plate mounting for tubular work and swing-out cloth plate for flat work. Also can be used for seaming.



Style 52700 M (above) equipped with Union Special's exclusive "Elastic Metering Device" for topstitching elastic to knit panties and similar garments.

HELPFUL BULLETINS. Send for copies of these informative bulletins: No. 254, "Efficient Production of Men's Knit Underwear." No. 255, "Machines for Making Women's Knit Underwear."

Union Special MACHINE COMPANY

407 NORTH FRANKLIN STREET • CHICAGO 10, ILLINOIS

Dyes & Chemicals

New Compound Prevents Growth of Bacteria

A new rot-proofing compound, known as Prezotex W.R.P., has been developed by Chemotex, Ltd., who are represented by Croda Ltd., Croda House, Snaith, Goole, Yorks, England. This compound is said to be completely neutral toward the fiber and to give the finished product an excellent appearance and hand.

Prezotex W.R.P. was developed for use on ropes and cordage and would replace such items as copper and zinc soaps of tar and fatty acids. This compound can be applied in one operation by roller application or by spray. The manufacturer recommends that it be applied at the first processing machine, and that 17 to 20% of the compound, based on the weight of the fiber, be applied.

A special grade of Prezotex is available for overseas use and is designated Prezotex G. B. 432. It is said to need the addition of water only to produce a material identical with ordinary Prezotex.

Cordage Waterproofed In Single Operation

A new waterproofing compound developed for the single-treatment waterproofing of hard and soft fibers has been announced by Croda Ltd., Croda House, Snaith, Goole, Yorks, England, selling agents for Chemotex Ltd. This new compound, known as Tristex, is an aqueous emulsion of irreversible character. The disadvantages of separation of the components or thickening of the emulsion normally associated with this type of emulsion are said to have been overcome in Tristex.

Tristex is said to offer the following advantages:

1. Low viscosity permits immediate wetting and penetration without lapping.
2. Ropes and cordage treated with Tristex do not swell in water and have an excellent polished appearance and hand.
3. Excellent fiber control is obtained in spinning.
4. Surface abrasion of the fiber is reduced.
5. Tristex acts as an excellent batching agent.

Tristex is said to have properties which make it a completely stable emulsion. It is entirely neutral in its action, and it is said to give complete water repellency.

The manufacturer recommends that 15 to 20% of Tristex, based on the weight of the fiber, be applied at the first processing machine by roller or by spray.

A special grade of Tristex is available for overseas use and is designated Tristex G. P. 430. Tristex G. P. 430 is a concentrate which needs only water added to it to produce a product identical to ordinary Tristex. To 100 lb. of Tristex G. P. 430, 240 lb. of water are added. The two materials are warmed together to 80° C. and stirred until cold, using high-speed stirrers.

Navy Blue Printing Paste Has Excellent Fastness

A navy blue printing paste, designated Calcosol navy blue NTP extra paste, is available from Calco Chemical Div., American Cyanamid Co., Bound Brook, N. J. This new printing paste is said to be a free-flowing, grit-free printing paste that can be shaded to a full range of navy shades by adding Calcosol jade green NP double paste, Calcosol blue GCP double paste, or Calcosol printing black R double paste. It is said to be particularly suited for printing under plissé.

Here are the fastness properties claimed by the manufacturer:

Light, excellent (7);
Laundering (cotton wash test no. 4), excellent (5);
Dry cleaning, very good (4);
Chlorine no. 4, excellent (5);
Water spotting, excellent (5);
Acid, excellent (5);
Alkali, excellent (5);
Plissé, excellent (5).

Non-Ionic Detergent Commercially Produced

A 100%-active, flake, non-ionic detergent, said to be the first of its type commercially produced, is announced by Wyandotte Chemicals Corp., Wyandotte, Mich. This detergent is one of an entirely new series of non-ionics developed by the firm. Known as Pluoronics, these new non-ionics are said to be particularly effective in hard-water areas. For this reason, it is expected that these "Pluoronics" will increase the efficiency of operation in both textile mills and commercial laundries.

Fire-Retardant Finish Is Durable

A new, durable fire-retardant resin finish, for fabrics, Pyroset, has been developed by the Textile Resin Dept., American Cyanamid Co., Bound Brook, N. J. Pyroset is available in several different formulations to meet specific requirements of various fabric. In one formulation or another, it has been approved by Underwriters' Laboratories, Inc.; New York City Board of Standards and Appeals; U. S. Coast Guard; and York Research Laboratories, official laboratory of the Hotel Owners Assn.

Fabrics treated by Pyroset are said to retain their flame-repellent properties after 25 or more dry or wet cleanings. Pyroset also is said to have little effect on the hand or feel of a fabric. Application of Pyroset finish is said to result in little or no loss in tensile strength. The manufacturer also claims that Pyroset-treated fabrics are free from any tendency toward browning or discoloration when hung near radiators or heating outlets, and that they do not become damp or soggy in wet weather. Dermatologists have found that Pyroset patch tests show no irritation or sensitivity.

The three Pyroset fire retardants, Pyroset D, Pyroset DO, and Pyroset D5 are said to be equally effective and durable through numerous wet dry-cleanings and solvent dry-cleanings on straight cotton goods. None of them should be washed in commercial laundries; because the various chemicals, such as strong alkalis and fluorides, commonly used either remove the fire-retardant qualities or degrade the fabric. However they are all durable through 10 normal home launderings with neutral soap. Pyroset DO or D5 is recommended for treatment of fabrics made of mixed cotton and synthetic fibers or fabrics made of all viscose or wool and mohair. They give fire-retardant results on these fibers equivalent to those described for cotton alone.

The Pyroset DO and D5 fire retardants also give a certain amount of fabric stability in addition to the fire-retardant effect; however the Pyroset D fire retardant does not control shrinkage.

After testing Pyroset D fire retardant, Underwriters' Laboratories Inc., reported that, in single sheets or in folds, fabrics consisting of cottons and rayons treated with Pyroset D are comparatively difficult to ignite; and that they will not propagate flame beyond the area exposed to the source of ignition. In further states that flameless or smoldering combustion, which occurs on ignition, does not extend beyond the area affected by surface ignition of the fabric resulting from the flame exposure. The results of this test also indicate that the treatment may be expected to remain effective under ordinary conditions of exposure and repeated dry and wet cleanings.

AHCO PRODUCTS

Give YOUR FABRICS

"THAT VELVETY TOUCH"

with . . . AHCOVELS*

*AHCOVEL*vet . . . that describes the finer finish, smoother, flexible hand and softer drape your fabrics will have when they're AHCOVEL treated!

Remember these AHCOVELS performance features:

- ✔ Lasting resistance to usual laundering and dry cleansing.
- ✔ Good stability to heat and storage.
- ✔ Odorless — won't discolor.
- ✔ **AHCOVELS E. — F. and R.* assure full retention of light fastness of any color.

ALL AHCOVELS ARE SUBSTANTIVE SOFTENERS

Ask about AHCOVELS for cotton, wool and synthetic fibers.

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Offices: Charlotte, Cincinnati, New York, Philadelphia, Providence
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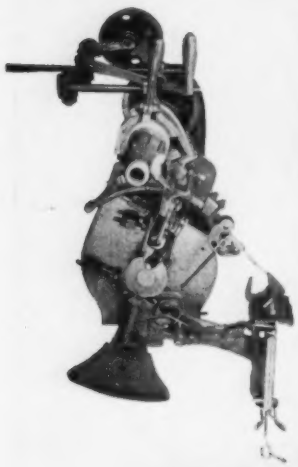


You are looking at the

Most Flexible Winding Spindle

in the industry

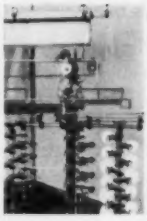
This basic spindle unit of the No. 50 Universal Precise Winder is used . . . not only to wind more than 90% of the world's coned synthetic yarn . . . but also to produce a wide *variety* of special work that is only hinted at on this page.

WINDING CREPE WITH MAGNETENSION

This device utilizes a magnetic field to provide constant, smooth tension, eliminating excessive peaks or loss of tension control caused by any uneven delivery from supply package.

WINDING THREAD ON BOBBIN SPOOLS

Large compact packages to deliver thread overend for the cutting trade are wound with this attachment equipped with automatic visible counter. A similar attachment winds the so-called "miniature" bobbin spool.



WINDING MULTIPLE ENDS FOR WIRE INSULATION, ETC.

Packages containing up to 30 ends are wound in perfect tape form from packages of previously-inspected yarn. Individual stopping mechanisms for each end permit tying single strands, avoiding "bunch" knots.

WINDING PINEAPPLE CONES OF NYLON

To put nylon into the best delivery form for full-fashioned, tricot, and circular knitting, the No. 50 Pineapple Coner with emulsion attachment is used, winding from tubes previously sized on the Universal No. 250B Single End Sizer.

WINDING 3° 51' CONES

The large diameter of this cone increases production upwards of 12%. It is especially suitable for fine denier nylon because it delivers with more uniform tension on the knitting machine.

WINDING DYE TUBES OF SYNTHETIC YARNS

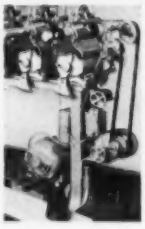
This Ray-Silk attachment winds synthetic yarn with a minimum amount of applied tension and pressure to produce soft tubes for uniform dyeing.

WINDING TWO OR MORE COPS

Two or more small packages per spindle can be wound with individual paraffin attachment, tension and stopping mechanisms. For example: three cops each 3½ in. long can be wound on one spindle.

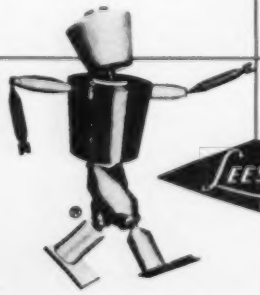
WINDING YARN FOR COVERING RUBBER

Here, two tubes per spindle, two ends per tube, are being wound for a rubber covering machine. Covered rubber yarn in skein form is then wound onto pineapple cones for the next operation.



WINDING HAND KNITTING SKEINS

Skeins of home knitting yarn are wound on No. 50 Winders equipped with special electrical attachments for automatically stopping all six spindles simultaneously at the predetermined yardage.



SEESONA

UNIVERSAL WINDING COMPANY

Universal Division

P. O. Box 1605, Providence 1, R. I.

Boston, Philadelphia, Utica, Charlotte, Atlanta, Chicago, Los Angeles; Montreal, Hamilton, Canada; Manchester, England; Paris, France; Basle, Switzerland

Agents in every principal textile center throughout the world

Winding and Twisting Machinery for Natural and Synthetic Yarns

Exploring THE TEXTILE COMMUNITY

By MILDRED BARNWELL ANDREWS

Information—PLEASE!
It's the Link to Better Understanding

Some mills use an intercom system . . .

Some mills use newsletters or house organs . . .

Some use newspaper advertising . . .

But whatever the method, employees should be kept informed about what's going on. Doing so can help keep morale and confidence at a point where even bad news isn't so hard to take.

They Put Radios in the Weave Room

MILDRED ANDREWS

Visiting one of the more progressive mills in the South, I had noticed radio outlets in every department. I had taken for granted that meant music relayed from a record player, but I wondered why in the world it was attempted in a weave room! The super taking me around on what he called an inspection tour said, "Let's stop here and have a cold coke." He put his nickel in the slot, topped the bottle, and handed it to me. "We might as well," he said as he glanced at the clock overhead, "it's almost time for the broadcast."

The Coca Cola tasted mighty fine, and I was sure glad to sit down on the long bench along the wall near the dispensing machine. High heels and mill tours just don't go together! "What goes on," I asked, "a fireside chat?"

"You could call it that", he answered as he sat down by me. "It's a plan we have been trying out now for more than a year, and we think it is fine. We put the broadcasting system in during the war. We used it then for daily news broadcasts, and it was a grand idea. After the war, we thought we'd have a weekly broadcast of news about people who worked in the mill, but we finally decided the radio system would lose its real effectiveness, so now we just use it when there is an announcement of importance, such as national news like the action in Korea and what effect it will have on our business . . . and then we use it for news about mill policies so our workers get them straight and before rumors are started. "For a long time," he said, "we had overlooked how important that is in keeping better understanding between workers and management. It's going to begin now—Listen." His voice suddenly was too loud as the machinery halted and the room was startlingly quiet.

Fireside Chat by the President

The announcement came from the president himself, a man with a friendly voice, and started off in the nicest sort of way. "Good morning, everybody. Today we have some news that may affect each of you and which we hope you will be glad to hear. . ." Then he went on to tell the workers in the plant that the mill had decided to sell the village houses, that they—the management—had carefully investigated the growing trend throughout Southern areas, and that the proposition had been examined from every angle, business and otherwise, before management made what he considered a fair decision. He told them that the houses would be sold at a price based on original cost, not present-day replacement values; that the occupant of the house would have first choice, but did not have to buy unless he wanted to; that if they did not buy, then the house would be sold to any other employee of the mill on a first-come, first-served basis. He told them not to worry. . . "You will have six weeks in which to make up your mind, and to make your financial arrangements which may be had on a long-term, low-interest basis amounting to little more than today's rent. If you prefer to live somewhere else, you may, of course. Above all," said the friendly voice from the speaker, "we want you to be sure to realize that whatever you decide to do, to buy your home or not to buy it, the decision is yours entirely. We will cooperate with you in any way you decide."

Then followed directions as to whom to see, and when, about their final decision, and closed with, "Thank you for letting us tell you about this policy move. You now know just as much about it as the management." A good chuckle broke into the speaker's voice, "You may know more than we do at that, for you know what you as individuals will plan to do—and we don't, as yet! So long for now. Keep in touch with our housing agent."

Smart Management . . . .

The radio clicked off and the motors started up; they had been idle about ten minutes. Every person had listened intently. I looked at the expression on the faces of these workers as they went back to their jobs. And I thought to myself, "What a wonderful system this is. They all like knowing what goes on, what to expect . . . and they all know it at the same time. It's a smart management that keeps the workers in touch with those who have to make the decisions which keep a mill operating smoothly and at a profit." As we were leaving the department one of the workers stopped the super. "Mr. Smith," he said, "please tell Mr. Jones when you see him—that is if you see him before I do, how much we appreciate his talking to us this way."

(Continued on page 232)

Pointers FOR SUPERVISORS

Can You Use These Industrial-Relations Twists?

By PAUL KING
Ass't. to Vice President for Personnel, Bigelow-Sanford Carpet Co.

What's New in Industrial Relations

In industrial relations, as in many other fields, there's really very little under the sun that is entirely new. But a slightly different twist, a variation in application of an old idea may increase its effectiveness a hundred times.

Here are some effective industrial-relations ideas currently being used in our industry and others that you may want to adapt in whole or in part in your own company.

It is the hope of the author that you will bring to his attention, for publication here, those effective ideas developed in your company that may be of help to others. Company names will be withheld if you wish. The only requirement is—Has the idea worked? Address Paul King, TEXTILE WORLD, 330 West 42nd St., New York 18, N. Y.

* * *

Human Relations Tip Sheets

You may have seem them. Several textile companies hand them out to their foremen. They're wallet-sized cards containing 10 or so human-relations ideas that supervisors can follow when dealing with employees—or the ideas may be printed in a pocket-sized diary. They're generally sold in wholesale quantities by publishing companies specializing in such material.

Just how effective are they in improving the human relations of supervisors? No one knows exactly. But there is strong feeling that such messages are more effective if they are part of a complete program for training supervisors in good human relations. Their best use is as follow-ups or reminders—to be distributed, for example, as a summary of conclusions reached during a supervisory training conference.

Letting Employees Into the Act

We often complain about the clock-watching office employee, or the production worker who is careless with the company's property. We expect these people to take the same interest in the company that we do. We also expect them to have a loyalty to the company that will make the activities of a union organizer a wasted effort.

But the truth is that a great many of us do not tell them enough about their company to create an interest in the welfare of the company upon which their jobs are dependent. We cannot treat them as strangers and expect the loyalties and devotion of friends.

Let's give them facts. The Potomac Electric Power Co. Washington, D. C., encourages its employees to take an interest in their company by two features in the company's employee magazine.

Feature one is a question box open to all employees. Questions of employees are answered by a responsible company officer. Misleading rumors are spiked by facts.

Feature two is devoted to telling employees top-level developments in the company. The feature is headed by this statement:

"Nobody Ever Tells You Anything? Get the News in Powergraphs—short, complete, up-to-date"

Safety Ideas That Pay Off

Safety jingles are not new. Many companies post them on bulletin boards to make workers safety-conscious. But here's a twist that makes an old idea even more effective—the safety-jingle contest.

Run a picture in your employee magazine—or post one on your bulletin boards—of an accident. Offer prizes for the best two-line safety rhyme. American Brake Shoe is doing this, in conjunction with the National Safety Council.

Color does it. In each issue of its employee publication, John A. Roebling's Sons, Trenton, N. J., inserts a special safety bulletin—in color. It's prepared in poster style but it's the color that attracts attention.

A safety test, another method of making employees safety-conscious, has been developed by Revere Copper and Brass Corp., Rome, N. Y., in cooperation with Syracuse University. However, another and more important feature of the test is to find out what each employee knows about safety, so that safety education in the plant can be tailored to his needs.

The test consists of pictures illustrating safety rules—three in a row. In some of them, rules are being followed; in others they are being broken. On another sheet, in blank boxes that correspond to the pictures, the employee is to place a check where a rule is being broken.

The booklet, handed to the employee after the test has been taken, gives him the correct rules of safety—the answers to the test in text form. A commercialized version of the test can be secured from Science Research Associates, 228 S. Wabash Ave., Chicago 4, Ill.

Activity Reports

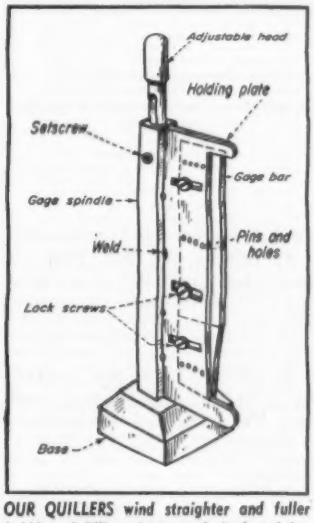
The activities report—used time and time again by your salesmen—can have an industrial-relations application, too.

The industrial-relations head of a leading textile company, with several persons reporting to him on different functions and with several persons on his own level with whom to coordinate his activities, found that there just weren't enough hours in the day for private conferences with each. Still, he wanted to be informed about the activities of those reporting to him. He cut down the time personal interviews take by requiring his people to file each week in summary form a list of their activities that week.

(*Continued on page 224*)

Kinks AND SHORT-CUTS

This Gage Gives Us More Accurate Quilling



OUR QUILLERS wind straighter and fuller bobbins of filling since we devised and began to use this gage for setting our builder racks. The gage bar can be adjusted for any diameter of wound quill.

Here's a gage we use for aligning the builder racks on the Abbott automatic quillers in our mill.

It consists of: (1) a plate holder that fits into the running position of a quill, and (2) an adjusting plate that permits precise gaging of the rack for the proper diameter of the wound quill over the whole length of the wind.

The holding plate is made as follows:

Small square stock is used for the part labeled Gage spindle in the sketch. The lower end of this spindle is welded to a square base. The outer side of the base is recessed so that it exactly fits the chuck that holds the butt of the quill.

The upper end of the spindle is drilled out so that the adjustable head shown in the sketch can be inserted. A setscrew hole is drilled and threaded in the spindle over the shank of the adjustable head. A setscrew run down against the shank holds the head in the position desired.

The adjustable head fits the place on the quiller where the top of the running quill fits. It can be adjusted for any length of quill.

The holding plate is welded to one side of the square spindle. The other edge of the plate is cut as shown, with an extension left at each end. These extensions rest on the top of the builder rack when the gage spindle is placed in the quill running position.

The gage bar is detachable from the holding plate. It can be adjusted inward for a smaller diameter of wound quill or outward for a larger diameter.

It is adjustable by means of setscrews and three slots in the holding plate. Correct alignment is insured by small pins in the holding plate and corresponding holes in the gage bar.

The gage is used as follows:

First, the gage bar is set to the correct diameter for the quill to be wound. Then the gage spindle is placed in the quill running position, with the holding plate turned down so that the tips of the plate rest on the quiller builder rack.

The builder rack is adjusted so that it is perfectly aligned with the edge of the gage bar.

When the gage is removed and the quiller started up with an empty quill, the rack will build a straight bobbin to the diameter for which it was set.

We've found that the use of this gage helps us to wind better bobbins and to fill the bobbins with the maximum yardage of yarn. We've reduced somewhat the number of battery transfers on our looms.

Here's How I Oil Circular Jack Butts

Usually there is no very satisfactory way to oil the needle jacks on a circular knitting machine. The jacks are located under the needles, and you can't get to them with an ordinary oil cup.

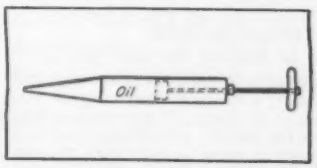
Many mills spray oil on the jacks, but spraying is not satisfactory because you can't help spraying oil on a lot of things besides the jacks.

The best method I've found is to use a pump-type oil cylinder similar to the one shown in the accompanying sketch.

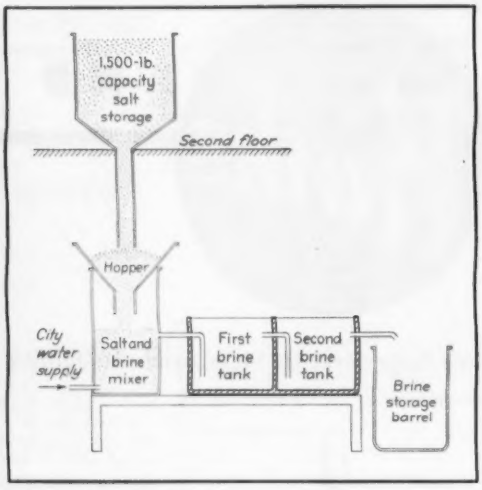
To load the cylinder, you push the plunger all the way down, stick the end of the cylinder in the oil, and raise the plunger.

The end of the cylinder comes off to a point that can be placed in the machine against the jack butts. With the loaded cylinder in that position, you push the plunger in gradually until the machine cylinder has made a complete revolution.

By this method you get uniform oiling without oiling other parts. *Joseph Rab, Leicester, England.*



JACK BUTTS on a circular knitting machine can be oiled quickly and uniformly with this plunger-type oiler. The end of the oiler is sharp enough to reach the jack butts while the machine is running and will oil only the parts you want.



THIS BRINE SYSTEM supplies a small volume of brine continuously to a hosiery-mill dye room. The salt-storage bin is located on the floor above the dye room. Brine can be dumped into the dye vat from the storage barrel as needed.

Our Continuous Mixer Supplies Us With Brine

Here is an automatic brine system we devised for supplying a small amount of brine on a continuous basis.

Before we made this gravity-flow system, we mixed brine in a barrel and poured it into the dye vat. The objections to this method were the necessity for salt storage and the amount of handling that was involved.

We now dump salt into a 1,500-lb. storage bin located on the second floor of the mill. It is near the freight elevator and directly over the dye room on the ground floor.

The bottom of the storage tank tapers to the center, where there is an opening for a pipe. This pipe leads down through the ceiling of the dye room and empties salt by gravity into the salt hopper shown in the accompanying photograph.

Directly below the salt hopper is a waterproof mixing tank. The hopper feeds salt into the mixing tank, and a water line coming in at the bottom of the tank supplies water continuously.

An overflow pipe leads from the mixing tank to the first of two brine tanks. With salt and water coming into the mixing tank continuously, brine overflows continuously from the mixing tank to the first brine tank.

A similar overflow pipe connects the brine tank with a second brine tank. The second tank overflows into a brine-storage barrel. The barrel is dumped into the dye vats as it is needed.

We Used Split Gears on Our Lift Shafts

Removing the lift gear from the lift shaft of a slubber is a major repair job. It takes a long time and causes a substantial loss of production—and in most mills slubber production is critical.

We used a split lift gear and cut our repair time from 4 to 6 hr. to about ½ hr. The gear is shown in the accompanying sketch.

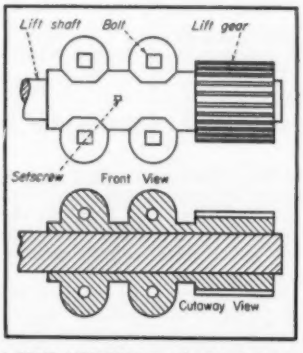
In molding the split gear, it is necessary to mold the gear and a split collar with split flanges all in one piece, as shown in the cutaway view in the sketch. The flanges have bolt holes in them so that when the two halves of the collar are placed around the shaft they can be held firmly in place by bolts. In the center of each half of the collar, there should also be a threaded setscrew hole to lock the collar to the shaft.

When a lift gear on a slubber broke, the fixer placed a heavy weight on the floor under the gear. Then he ran the carriage down until the gear rested on the weight. With a sharp chisel, he cut the gear off the shaft. The weight under the gear keeps the shaft from being bent.

When the gear was cut off the shaft, the fixer placed the two halves of the split gear around the shaft and locked them into position with the four bolts and two setscrews.

If the lift shaft were removed some time later, the split gear was taken off the shaft and a standard lift gear put back on.

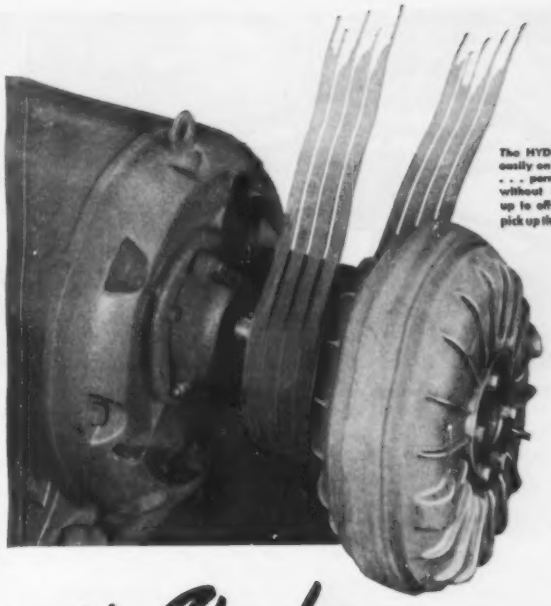
We always kept at least a half dozen of these split gears on hand. They saved us a lot of time and helped in raising our production. *William Shaw, Providence, R. I.*



***A SPLIT LIFT GEAR** for the lift shaft of a slubber cut to ½ hr. a repair job that ordinarily took 4 to 6 hr. Bolts and setscrews hold the two gear sections together on the shaft.*

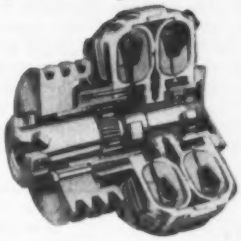
For smooth power see your HYDRO-SHEAVE Dealer

Birmingham, Alabama: Owen-Richards Company, Inc. . . . Phoenix, Arizona: Arizona Equipment Sales, Inc. . . . Little Rock, Arkansas: Allied Bearings, Inc. . . . Bakersfield, California: California Truck & Industrial Eqt. Company . . . Los Angeles, California: Charles W. Carter Company . . . San Francisco, California: Charles W. Carter Company . . . Calgary, Alberta, Canada: Precision Machine & Foundry, Ltd. . . . Edmonton, Alberta, Canada: Precision Machine & Foundry, Ltd. . . . Montreal, Quebec, Canada: Consolidated Enginas & Machinery Company, Ltd. . . . New Toronto, Ontario, Canada: Consolidated Enginas & Machinery Company, Ltd. . . . Vancouver, B. C., Canada: Wilson Equipment Company . . . Denver, Colorado: Industrial Equipment Company, Inc. . . . London W. C. 2, England: British Twin Disc & Clarifiers, Ltd. . . . Miami, Florida: Central Machinery & Supply Company . . . Tampa, Florida: Southern Pump & Supply, Inc. . . . Atlanta, Georgia: R. L. Fulghum Company . . . Chicago, Illinois: Industrial Engine & Parts Company . . . Great Bend, Kansas: Schaefer Supply Company . . . Lafayette, Louisiana: Jos. A. Tobin, Jr. . . . Shreveport, Louisiana: Bearing & Transmission Company . . . Baltimore, Maryland: Curtis Engine & Eqt. Company . . . Boston, Massachusetts: New England Engine & Parts Company . . . Detroit, Michigan: W. C. DuComb Company, Inc. . . . Flint, Michigan: Granston-Hall & Company . . . Minneapolis, Minnesota: Industrial Supply Company . . . Jackson, Mississippi: Stewart-Ramey Company . . . Kansas City, Missouri: Allied Transmission Eqt. Company . . . St. Louis, Missouri: Wholesaler's Service Company . . . New Brunswick, New Jersey: Slingman Industrial Supply Company . . . Paterson, New Jersey: Bernstein Brothers, Inc. . . . Bronx, New York: General Machine Parts Company . . . Buffalo, New York: J. A. Webb Belting Company, Inc. . . . New York, New York: Twin Disc Clutch Parts & Service, Inc. . . . Syracuse, New York: Syracuse Supply Company . . . High Point, North Carolina: Power Transmission Company . . . Cincinnati, Ohio: McCash Transmission Company . . . Cleveland, Ohio: Smith Power Transmission Co. . . . Columbus, Ohio: Ohio Transmission Company . . . Toledo, Ohio: Ohio Belting & Transmission Company . . . Seminole, Oklahoma: Hopeman Equipment Company . . . Tulsa, Oklahoma: Service Engineering Company . . . Portland, Oregon: Power Transmission Prod. . . . Philadelphia, Pennsylvania: Transmission Engineering . . . Pittsburgh, Pennsylvania: Contractors Eqt. Service Company . . . Santurce, Puerto Rico: Ramon I. Gil . . . Knoxville, Tennessee: Browning Belting & Supply Company . . . Dallas, Texas: G. G. Unlaub Company . . . Edinburg, Texas: Equipment Specialties Company, Inc. . . . El Paso, Texas: Hirsch Brothers Machinery Company . . . Houston, Texas: The Jno. Muller Company . . . Odessa, Texas: Vance Supply Company . . . Salt Lake City, Utah: Lund Machinery Company . . . Seattle, Washington: Chain Gear, Inc. . . . Charleston, West Virginia: Capitol City Supply Company . . . Milwaukee, Wisconsin: Wisconsin Bearing Company.



The HYDRO-SHEAVE fits easily on the motor shaft . . . permits the motor, without strain, to come up to effective torque to pick up the load smoothly.

No Shocks... No Strains



When fluid in motion transmits the power from driving to driven units, as in the ready-to-attach Twin Disc HYDRO-SHEAVE DRIVE, you obtain full-torque performance—minus shocks and strains . . . a smooth, sustained flow of power that means longer work-life for your equipment.

Moreover, you have overload protection. The load may be at a complete standstill, but the *motor* can't stall.

Most important, the pick-up and the acceleration of the load are so smooth that you can often speed up the production cycle to lower costs . . . and often further lower costs by selecting a motor to fit running load requirements rather than starting requirements.

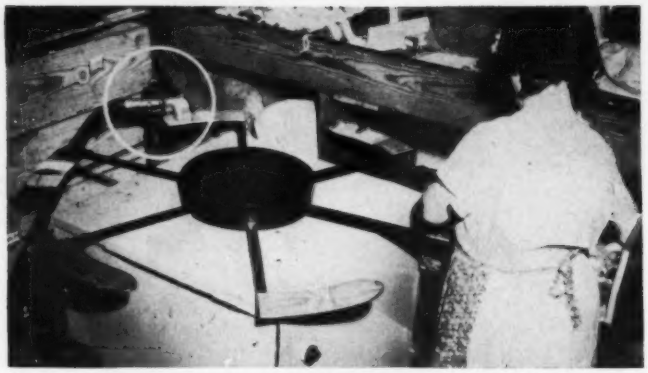
All of these are built-in features of the Twin Disc HYDRO-SHEAVE DRIVE—which requires only a few minutes to install. Ask any of the dealers listed here to give you more facts on how this hydraulic drive will save you money in the long run.

TWIN DISC
CLUTCHES AND HYDRAULIC DRIVES

Clutches & Hydraulic Drives

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin • HYDRAULIC DIVISION, Rockford, Illinois

BRANCHES: CLEVELAND • DALLAS • DETROIT • LOS ANGELES • NEWARK • NEW ORLEANS • SEATTLE • TULSA



SOCK CLIPPING is an automatic operation, except for "put on" and "take off" at Lawler Hosiery Mills. This feed table passes the socks under the electric clipper shown in the circle.

Lawler's Feed Table Speeds Sock Clipping

Lawler Hosiery Mills, Carrollton, Ga., has devised an automatic arrangement for clipping socks. It has cut in half the labor involved in sock clipping.

The clipper and automatic clipper-feed forms are shown in the accompanying photograph.

A standard electric clipping machine, shown in the circle, is supported in working position by an upright steel pipe and bracket. The operator places a sock on one of the revolving forms. When the form passes under the clipping machine, the loose threads on the sock are clipped off.

The feed table is made as follows:

A square table with a plywood top is used for the framework. The cardboard sides of the table only enclose the working parts located underneath.

Under the table is a metal base that supports a ¼-hp. motor, a worm drive, and an upright shaft with a worm-driven gear.

The upright shaft extends through a hole in the center of the table top. A circular steel plate is fastened to the shaft by setscrews through the hub of the plate.

Six arms, made of 1-in. angle iron, are spaced equidistant on the circular plate. The arms may be welded to the plate, or one side of the angle iron may be inserted in a slot cut in the plate and the top side (horizontal) fastened to the plate with two bolts.

The arms must be of the same length. They must also be mounted so that each one has the same clearance as it passes under the electric clipper.

On the end of each arm, a home-made plywood sock form is mounted in the position shown in the photograph. The edges of the forms are beveled; and the forms are shellacked, waxed, and polished.

The center disk to which the arms are fastened is covered with a plywood cover made in the shop.

A motor switch to start and stop the feed table and the clipper is mounted on one of the table legs in easy reach of the operator.

Here's how the arrangement is used:

The operator has a small wooden table for keeping a supply of socks handy. This table can be seen in the photograph at the operator's right elbow.

With the feed table and clipper running, the operator slips a sock over the plywood forms as they pass her position. The form passes under the clipper. The clipper cuts off the threads, and a suction pipe connected to the clipper takes the threads to a vacuum tank under the table.

When the form with the clipped sock comes around again, the operator takes the sock off the form.

Usually, socks are put on three of the forms and taken off the other three, with the "put on" and "take off" alternating.

If faster clipping is needed, another operator can be assigned to the clipper. Then one worker puts on the socks, and the other takes them off. Clipper production can be a little more than doubled this way because the operators don't have to change from "put on" to "take off."

$200 for Best Kink in 1951
$25 for Best Kink Each Month

In Addition to Space Payment on Acceptance

You undoubtedly know of many kinks and short cuts that are helpful to mill operators. Write them down and send them in. We pay promptly on acceptance—before publication. In addition, your kink may win the $200 check for the best kink of the year or the $25 check for the best kink of the month, maybe both!

Send in your kink now. There is always a contest going on. The more good kinks you send in, the better your chances of winning a prize in addition to earning some easy money for every kink accepted.

We will polish up your writing and will have an artist make finished drawings. But send in plenty of details so that your kink can be clearly explained. Be sure your sketch is clear and well labeled, but it need not be a polished job. Best of all, send us a good glossy photograph of it—we will pay you extra if you do and we can use it.

Look over the kinks in this and other issues. You will get ideas you can use as well as inspiration for kinks you can send in. We like items that pertain to ways for improving machines, new devices that a mill man can build, attachments or methods of merit—anything that will cut costs, improve quality, or help production.

Your published kink will be judged impartially by other mill men. In case of ties, duplicate prizes will be awarded.

RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $200 prize contest for the year. Monthly contest confined to kinks published that month, yearly to those published in calendar year 1951.
3. All kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred kinks in each issue. Their votes will select the best kink, and their decision will be final.

Send kinks to whichever address you prefer:

TECHNICAL EDITOR, TEXTILE WORLD
330 W. 42nd St., New York 18, N. Y.

ASSOCIATE EDITOR, TEXTILE WORLD
P. O. Box 1641, Columbus, Ga.

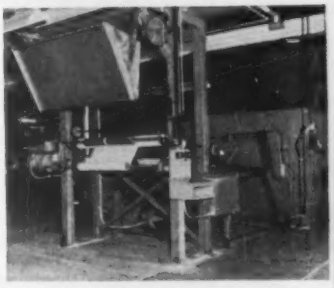
NEW ENGLAND EDITOR, TEXTILE WORLD
P. O. Box 305, Salem, Mass.

Proctor PIN TENTERS

OFFER DEMONSTRATED RESULTS COMBINING *ALL THREE FEATURES* NEEDED FOR QUALITY FINISHING

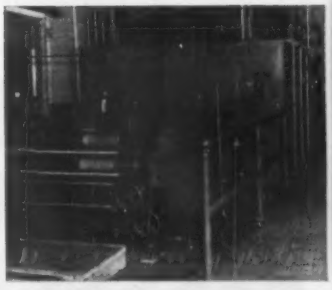
CONTROLLABLE OVERFEED

The overfeed mechanism used with Proctor pin tenters, first developed by John Dalglish & Sons, of Scotland, and now manufactured and sold by Proctor & Schwartz, Inc., in America, with improvements designed for American finishing, makes it possible to overfeed fabric to pins in any percentage from minus 5% to plus 35% and have the cloth evenly and uniformly deposited. The amount of overfeed can be instantly adjusted by a simple handwheel arrangement.



ACCURATE GUIDING

Proctor pin tenters are sold with an improved Electro-Hydraulic positive displacement guider of Proctor design and manufacture, under basic Dalglish patents, providing extreme accuracy in guiding fabrics onto the pins at speeds of over 100 yards per minute.



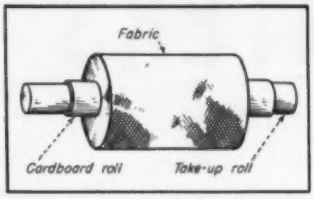
BALANCED DRYING

The special nozzle system employed in the housings of these overfed pin tenters assures maximum drying speed without fabric distortion. Heated air at high velocity is impinged against both sides of the fabric and is equally balanced. Even, uniform drying is the result. Proctor Overfed Pin Tenters are producing quality fabric results at the rate of more than 75 million yards annually.

PROCTOR OVERFED PIN TENTERS are available in either the vertical (Dalglish) or horizontal type, for laces, tricots, specialty goods, as well as standard fabrics. A demonstration can be arranged for the fabrics you are finishing!

PROCTOR & SCHWARTZ, INC.
710 TABOR ROAD • PHILA. 20, PA.

Cloth on Tricot Loom Wound on Cardboard Tube



***A CARDBOARD ROLL** over the metal take-up roll on a tricot loom makes doffing the cloth roll easier. The cloth and cardboard cover are slipped off the end of the take-up roll.*

The usual way of taking a piece of goods off a tricot loom is to cut the fabric, pull it off the take-up roll, and screw it up into a tight bundle.

This method is efficient, but it has two disadvantages: (1) the cloth may be soiled by touching an oily part of the machine or by an operator's hands; (2) certain fabrics may be creased and cause trouble in finishing.

One way to avoid these faults is to use a cardboard roll over the take-up roll, as shown in the sketch.

The cardboard roll is slipped over the take-up roll, and the cloth is wound on it instead of on the metal take-up roll. When the cloth roll is full, the cloth and the cardboard cover are slipped off the take-up roll.

The only change necessary to the machine is to make the take-up roll easily detachable. *Joseph Rab, Leicester England*

Rest-Room Blackboard

Sign on a 3x4-ft. blackboard mounted on a wall in a men's rest room: "Please write it here—not on the wall."

Bar on Elevator Tilts Cloth Bale

Tilting a bale of cloth so that the lip of a hand truck can be pushed under the bale is a small thing—but it's work. So Gregg Dyeing & Finishing Plant, Graniteville, S. C., eliminated it.

Shown here is one of the double cloth elevators installed by Gregg. Each of them has a tilting-bar floor that tilts the bale against the steel-frame back of the elevator. The bale rests on the bar, with the lower front edge raised.

The hand truck is pushed into the elevator until the wheels come against the stop at the edge of the elevator. This position places the lip of the truck well under the bale. All the operator has to do is pull the bale over onto the truck.

Having double elevators speeds up cloth transfer between the different floors.

As shown in the photograph, both elevators are driven by one motor. A chain from the motor drive raises one elevator and lowers the other at the same time. While the operator shown here loads or unloads the elevator on the second floor, another operator on the first floor is loading or unloading the other one.

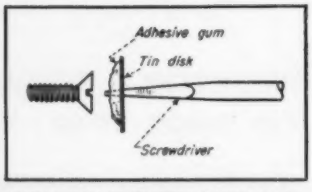
A hinged steel plate covers the elevator hole when the elevator is downstairs.

***BALE TILTING** requires no work on this cloth elevator at Gregg. The bar on the floor tilts the bale against the back of the elevator so that the lip of the hand truck can be pushed under the bale.*

We Protect Sliver From Rough Can Rims

***SLIVER PULLED FROM CANS** is protected from rough can edges in our mill by these home-made guides. We make the guides of polished sheet metal. Each guide is 4½ in. across, 3½ in. deep, and 3 in. wide. The edges are beveled. Each guide is supported by a semicircular link of ⅜-in. cold-rolled bar, which is held in place over the center of the can by three supporting legs made of 6x1¼x¼-in. malleable iron. The legs fit over the rim of the can as shown.*

Use This Method For Starting Screws



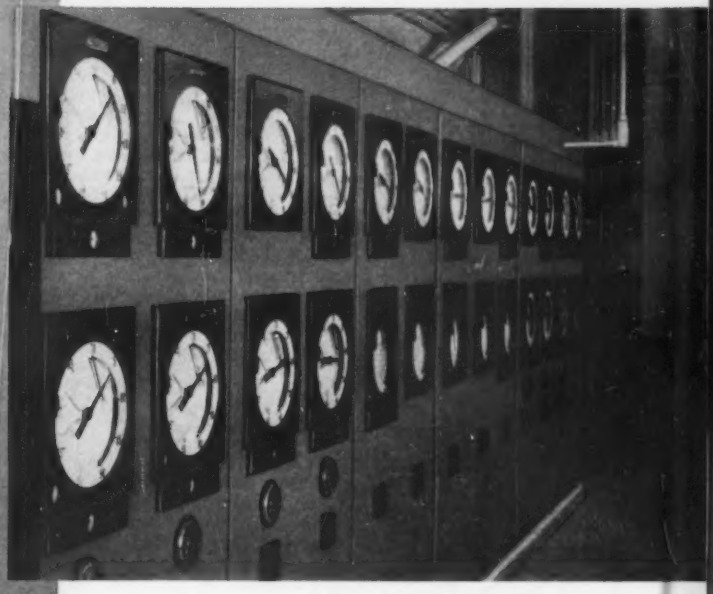
***SCREWS CAN BE STARTED EASILY** in close places by the method shown here. Use a small tin disk with a slot in it to fit over the end of the screwdriver blade. Cover the screw side of the disk with adhesive gum. (Putty or heavy grease will do for small screws.) Put the screw on the end of the screwdriver with the point of the driver in the screw head, and press the head of the screw against the adhesive gum. The gum will hold the screw on the screwdriver. This method can also be used to remove screws that you can't catch with your fingers. W. E. Warner, Essex, England.*

RELATIVE HUMIDITY MEASUREMENT Revolutionized with the *ElectroniK* HYGROMETER

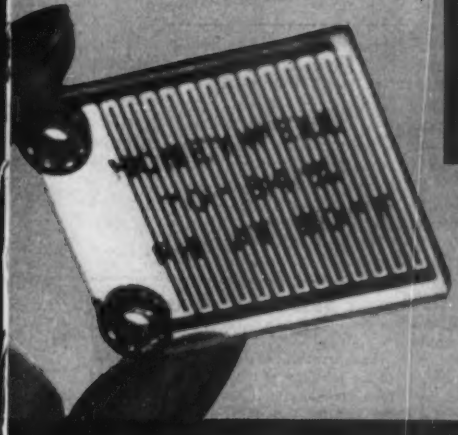
Readings are Direct

Response is Faster

Control is Centralized



▲ *ElectroniK* hygrometers on central control panel at Woodside Cotton Mills, Easley, S.C.



◀ New Honeywell electronic humidity sensing element.

THE *ElectroniK* HYGROMETER IN YOUR MILL MEANS:

- **Closer humidity control than heretofore possible.**
- **Centralized control or monitoring panel for remote measurement over distances up to 1000 ft.**
- **Linear calibration for easier reading and more precise control.**
- **A system designed to meet the functional requirements of air conditioning engineers. Available with or without control.**

HERE IS NEWS! A super-sensitive measuring element with a 10-second speed of response and an instrument that indicates and records relative humidity directly . . . without interpolation from psychometric charts . . . without psychometric accessories such as water supplies, wicks and porous tubes . . . without vulnerable capillary tubing and its distance limitations.

Here are the salient features which make possible closer humidity control in your mill or office, to increase efficiency of machines and personnel: *1. ±1% accuracy. 2. Effective operating range between 35 and 93% RH or increments of 20% RH minimum span between these limits. 3. Full temperature compensation between 50° and 120° F.*

Your local Honeywell engineer is ready to give you more detailed information, in terms of your application. Call him in today . . . he is as near as your phone!

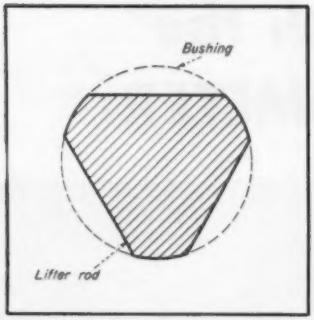
MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4509 Wayne Ave., Philadelphia 44, Pa. Offices in more than 80 principal cities of the United States, Canada and throughout the world.

MINNEAPOLIS **Honeywell**

BROWN INSTRUMENTS

Kinks AND SHORT-CUTS

Our Lifter Rods Don't Stick Now



***OUR SPINNING LIFTER RODS** do not stick since we milled them down to a triangular shape. Lint works its way to the open spaces between the rod and the bushing and falls through or is easily removed.*

We used to have trouble in our spinning room with lifter rods sticking. Besides the bad work made, we lost a good bit of time cleaning up bad work, cleaning out the lifter-rod chokes, and oiling the rods.

We figured out a way to put an end to these worries.

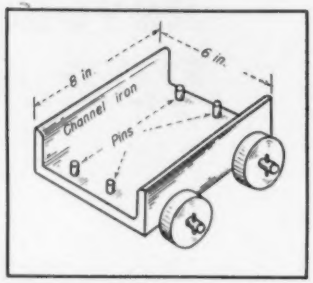
Practically all the stuck lifter rods were caused by lint chokes accumulating between the rod and the lifter-rod bushing in the spindle rail. The clearance of the bushing around the rail is so small that a small amount of lint will choke the bushing and cause the rod to stick.

We milled the rods to a triangular cross-sectional shape as shown in the sketch. This shape of the rod gives three points of contact between the rod and the bushing. It also leaves three open arcs between the rod and bushing. Lint works its way into these arcs and either falls through of itself or can be easily removed.

We have not been running the milled-down rods long enough to determine any difference in wear. But we do know that we have fewer stuck lifter rods.

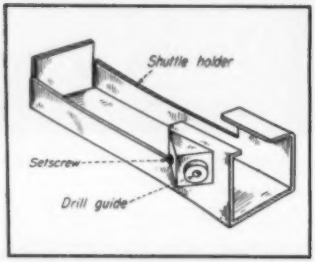
The traversing of the ring rail is not affected.

We Needed a Dolly —So We Made One



***THE HOMEMADE DOLLY** shown here was quite useful to us in moving machine parts. It is made of an 8-in. length of 6-in. channel iron welded to two 11-in. lengths of 1-in. cold-rolled stock that serve also for wheel axles. For wheels, we used four gear blanks about 3½ in. in diameter. A washer is used behind each wheel to keep the wheel from rubbing against the channel iron. The wheels are held on the axles by pins in the ends of the axles. Two ½-in. upright pins at each end of the dolly keep loads from slipping off.*

Our Bristle Holes Are Drilled Accurately



***SHUTTLE-BRISTLE HOLES** drilled with this guide are always in the proper location and are always drilled at the proper angle. The only materials used in making the guide were sheet metal, a bushing with a ⅛-in. bore, and a setscrew.*

We use bristles in some of our loom shuttles to help control tension on the filling as it unwinds from the quill. The bristles, of course, are inserted at an angle in the shuttle wall.

Drilling a hole for the bristles used to be a ticklish job. Sometimes a fixer would misjudge the position or angle and would have to drill three or four times before he could be sure of getting a satisfactory bristle hole.

We made the drill guide shown in the accompanying sketch. Its use has eliminated guesswork in locating and drilling bristle holes. Now, all we have to do is place a shuttle in the holder and push the drill through the guide.

The holder is made of heavy sheet metal bent up at the sides and at one end, as shown in the sketch. At the open end of the holder, the sheet metal is also bent over at the top, as shown, so that the shuttle held firmly during drilling.

The inside dimensions of the holder correspond with the outside dimensions of the shuttle. A shuttle placed in the holder should fit snugly into it.

The guide is made by welding four pieces (two triangular and two rectangular in shape) of sheet metal together. These pieces are then welded to one side of the holder in the proper position for the bristle hole in the shuttle.

A hole is drilled in the front rectangular guide wall large enough to receive a hardened steel bushing with a ⅛-in. bore. The drill bit will be inserted through the bore of this bushing.

A setscrew hole is then drilled and threaded in the top guide wall so that a setscrew run down in the hole will bear against the bushing and hold it tight against the sheet-metal wall of the holder.

It will be necessary to drill a ⅛-in. hole in the wall of the holder. We drill this hole by inserting the drill through the guide bushing.

We place the holder in a vise or brace it on a workbench. Then we push the shuttle to be drilled through the open end of the holder until the back point of the shuttle is against the stop at the back end of the holder.

With the shuttle in that position, we insert the drill bit through the guide hole and drill the bristle hole in the shuttle.

The use of the guide saves time and insures accuracy. *L. J. Beland, Greenville, N. H.*

Best-Kink Award for November

Each month TEXTILE WORLD awards $25 to the submitter of the kink which is judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the kink appears.

The best kink for November, according to TEXTILE WORLD reader-judges, was:

"Top Warp-Beam Let-off Is Driven by Crankshaft"

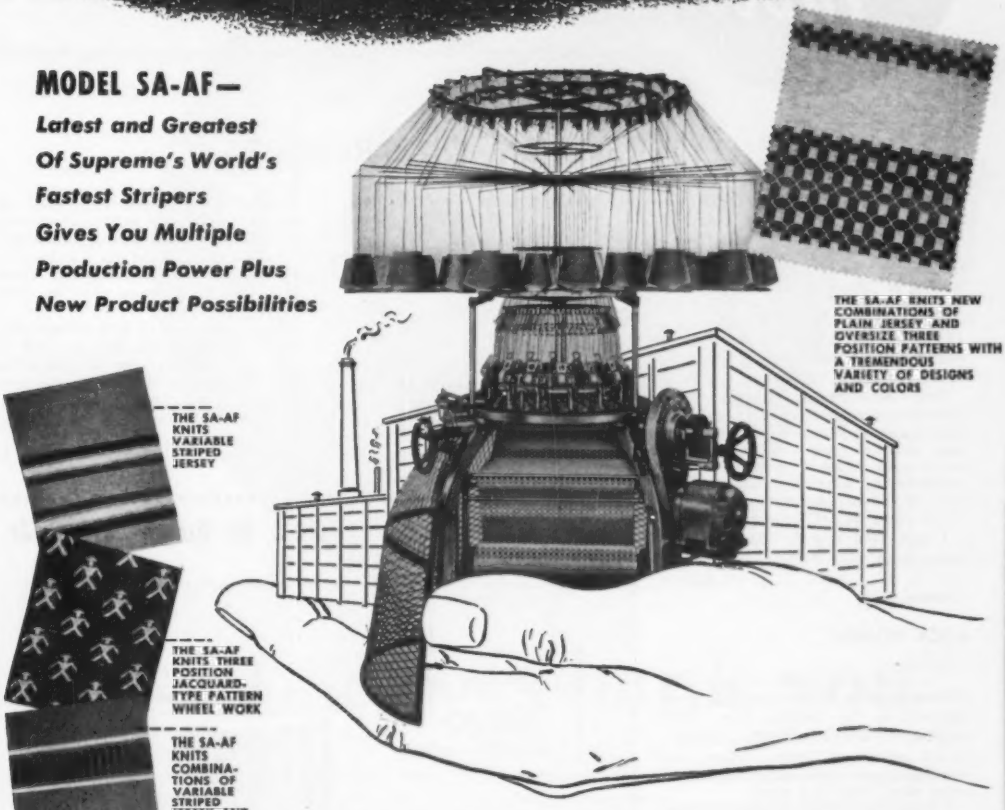
By Ernest Kallas
Melle, Belgium

Mr. Kallas is being sent a check for $25 with the compliments of TEXTILE WORLD.

Meet a ONE-MACHINE KNITTING MILL

MODEL SA-AF—

Latest and Greatest
Of Supreme's World's
Fastest Stripers
Gives You Multiple
Production Power Plus
New Product Possibilities



THE SA-AF KNITS NEW COMBINATIONS OF PLAIN JERSEY AND OVERSIZE THREE POSITION PATTERNS WITH A TREMENDOUS VARIETY OF DESIGNS AND COLORS

THE SA-AF KNITS VARIABLE STRIPED JERSEY

THE SA-AF KNITS THREE POSITION JACQUARD-TYPE PATTERN WHEEL WORK

THE SA-AF KNITS COMBINATIONS OF VARIABLE STRIPED JERSEY AND THREE POSITION PATTERN WHEEL WORK

THE SA-AF KNITS MULTI-COLORED PLAIDS AND CHECKS

THE SA-AF KNITS: IN-LAY FLEECE FABRICS
RUBBER IN-LAY FABRICS
KNIT AND TUCK CONSTRUCTIONS
KNIT AND WELT CONSTRUCTIONS

SK-136

With the new Model SA-AF you get the knitting ability of the entire Supreme-line of stripers and pattern wheel machines – PLUS – a new range of patterning, heretofore impossible.

On one machine you get multi-machine versatility at revolutionary high production rates. You can knit any of the fabrics listed on this page. Switch from one to another quickly and simply. And to top it off, you can knit market-appealing, new combinations of plain jersey and *double size* three position patterns with a tremendous variety of designs and colors.

The Model SA-AF has 32 feeds, each with a three position pattern wheel and a new-type Pattern Placer. The Pattern Placers allow individual control of the pattern at each feed. By means of simple chain link control, unlimited repeats of oversize multicolored pattern area may be obtained in combination with any length of plain jersey. The 16, four-color, constant-feeding Striping Boxes are independently controlled by a simple, chain-link-actuated floating cam. Colors in the pattern area may be easily changed whenever desired.

As on all Supreme machines, the stationary yarn stand makes possible higher RPM and minimizes maintenance. It lets you make "pig-tail" double tie-ups . . . use each cone to the end. Synchronized "No-Waste" cutters* eliminate all yarn waste.

Write for further information and fabric swatches.

*Patents Applied for

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KNITTING MACHINE CO., INC.
107 JOHNSON AVE. BROOKLYN 6, NEW YORK, N. Y.

Round Table

Letters from readers, of both technical and general interest, will be considered for publication in these columns for the benefit of the textile industry. If you wish to add your knowledge and ideas to those expressed in the Round Table or elsewhere in TEXTILE WORLD, please write us a letter, or use the Reader-Service card bound into each issue. Origin of your letter will be kept confidential upon request in writing at the time you submit your contribution, but be sure to sign your name as evidence of good faith.

LETTERS FROM OUR READERS

STUPID OR SHORTSIGHTED?

Dear Editor:

I have just finished reading your editorial in the November issue under the heading of "Stupid or Shortsighted?" and was interested in it because of the fact that I have been negotiating with unions since 1937, and this subject has come up repeatedly as a request from the union to secure a wedge in our timestudy work. . .

Some members of management who have been strongly opposed to the union participating in job analysis and timestudy have modified their views considerably, and honestly believe it would create better understanding between management and labor by allowing the union a small voice in this particular field of management.

I have been strongly opposed to any participation whatsoever.

A READER

Trenton, N. J.

BOOK REVIEW

Dear Editor:

I was interested in the review of *The Whitin Machine Works since 1831* which appeared in the October issue. What surprised me was the complete elimination of any mention of Marston Whitin, who everyone knows really made Whitin Machine Shops what it is today.

I think your reviewer certainly "messed" this one up.

A. K. LANDAU

Boston, Mass.

TEXTILE BIBLIOGRAPHY

Dear Editor:

I read with interest your compilation of a textile bibliography in the August issue of TEXTILE WORLD. We think it was a necessary and, on the whole, a good job.

Of course, I immediately compared it with my own bookshelf, which consists chiefly of books concerning textile chemistry and dyeing. You do not seem to be aware that there is a 5th Edition of Whittaker and Wilcock, "Dying with Coal Tar Dyestuffs," dated 1950. Missing also is that invaluable little book, "Theory and Practice of Wool Dyeing," by C. L. Bird, Society of Dyers and Colourists (1947) . . .

I trust that these small suggestions will be of some help.

When you get out your revised edition, I should like to receive a copy.

R. W. JOERGER

North Scituale, R. I.

[*The revised bibliography will be available sometime next month.—Editor*]

CORRECT LAY GEAR

Dear Editor:

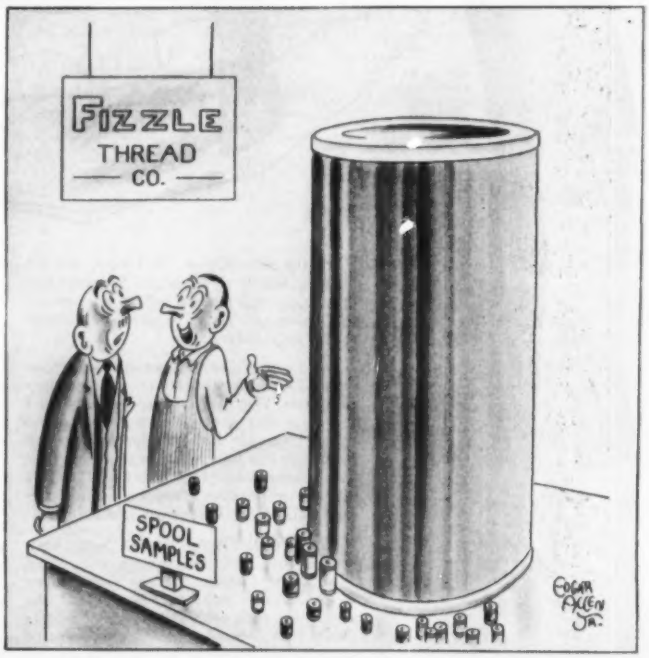
I am greatly surprised and somewhat amused by the large number of formulas given in current textile literature for figuring the correct lay gear on cotton roving frames. . .

While the strand of roving is being wound one coil around the bobbin, the carriage must make a movement equal to the space that is occupied by this strand. It is the contour of the strand and not its diameter that must be considered. There is a noticeable flattening effect on these first strands. . :

If the coils are not close enough, tension on the strand will cause the coils on each layer to sink between the coils of the preceding layer. If the coils are too close and overlap, the bobbin-diameter increase prevents the cones from maintaining proper tension. . .

The actual lay on the empty bobbin is

TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*



"It's my own idea, boss—I call it our large, economy package!"

1892 INDUSTRY AND HYATT—PARTNERS IN MECHANICAL PROGRESS **1951**

Hyatt says "Thank you"

Together we've worked through fifty-eight busy and pleasant years—but the last one, thanks to you, was the greatest in Hyatt's history.

Seems as if all Hyatt users moved ahead with the big production parade in agriculture—textiles—petroleum—highways—automotive—railroads—aviation—steel—material handling and numerous other fields.

The resultant increased orders for Hyatt Roller Bearings, we deeply appreciate. And at the same time we are equally happy over the continued and ever-growing preference for Hyatt precision production and outstanding performance.

In anticipation of your future demands for like workmanship and service, we are constantly providing improvements in our product design, application and manufacturing facilities.

So with our fifty-ninth year ahead, we want all of our old friends, and new, to know Hyatt not for our "age" but for our "experience" as . . . the largest manufacturer of straight cylindrical roller bearings in the world.

HYATT BEARINGS DIVISION, GENERAL MOTORS CORPORATION
Harrison, N. J., Chicago, Detroit, Pittsburgh, Oakland, Calif.

HYATT ROLLER BEARINGS

the best guide in selecting the proper gear. If the lay is seen to be incorrect, despite the presumed exactness of any formula used, then a change must be made. . .

WILLIAM SHAW

Providence, R. I.

AMBLER SUPERDRAFT SYSTEM

Dear Editor:

Commercial working of frames converted for use with the Ambler system have been operating for over 12 months, and the results are claimed to be quite satisfactory.

On ordinary worsted spinning frames, the back rolls are modified, the bottom rolls being flanged. Existing carriers are replaced by Ambler Superdraft units, one unit per spindle. The four principle parts of the unit are known as the twist stabilizer, fiber guide, carrier rolls, and the flume.

1. The *twist stabilizer* is about one in. in length and grooved to lead the roving forward and to prevent it from rotating and losing twist.

2. The *fiber guide* continues to lead the roving forward to the tension carrier rollers on intermediate feed rolls.

3. The *carrier rollers* are about 0.3 in. in diameter and are flanged, positively driven at a surface speed some 10% greater than that of the back rolls. The bottom roll has flanges 0.075 in. apart. The top roll is fluted, carried in a hinged bracket, and is rather lightly weighted.

4. The *flume*, roughly 0.75 in. in length, is a tapering piece of metal with a tapering channel of rectangular section. This slot preserves the roving in solid, rectangular form and prevents rotation of roving or loss of twist. The flume goes close into the nip of the front roll, being only 0.1 in. in depth.

After making a fiber-length analysis of the top to be used, it is possible to predict very closely the settings necessary for best operating result, i.e., the cross-sectional area of the flume and the position of the unit in relation to the front-roll nip. Slight adjustments can readily be made when the machine is running.

The possibilities of the system in reducing processing costs can be appreciated. Commercial worsted yarns are being spun with drafts of 150 and higher. The system has been used on cotton with a draft of 110, long rayon staple with drafts of 1,000, and so forth.

In addition to eliminating drawing operations, the system increases the scope of a mill since it is possible to spin a whole range of counts from 10s to 60s from one roving weight.

H. M.

Yorkshire, England

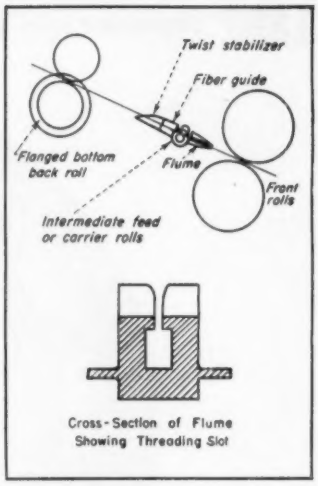


Diagram of the Ambler Superdraft system

YARN-NUMBERING NOMOGRAPH

Dear Editor:

I read with interest the short paper by Mr. Tyler G. Hicks published in the August issue on page 156. I would like to point out that the axes on which the scales of the inverse yarn counts A and B are plotted need not be set at a 70° angle. Any angle less than 180° will do.

While it is obvious that the smaller the angle the larger the scale for the "combined yarn count," it is much easier to plot the single-yarn counts on the vertical and horizontal axes of ordinary graph paper.

The scale line in this case is easily drawn from the origin, being the diagonal of the squares formed by the horizontal and vertical lines of the graph paper. The scale for combined counts is on the line bisecting the angle formed between the scales for the two single counts, no matter what angle is decided upon.

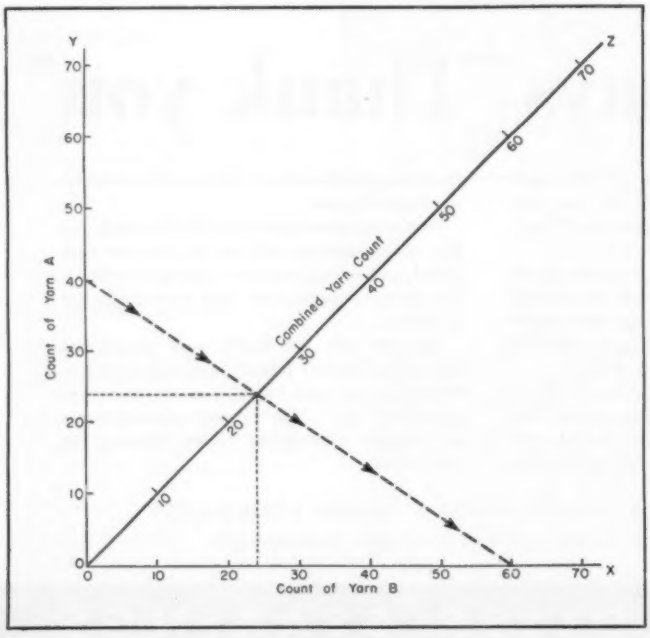
It is of course necessary to use the same scale for yarn counts A and B. The scale for the combined counts on graph paper is easily written out against the diagonals of the squares that are formed by the respective units on the scales for A and B.

The same simple example of a two-ply yarn as used by Mr. Hicks is given in the attached sketch to illustrate the use of a nomograph plotting the scales for yarns A and B on ordinary graph paper. The combined count may be read off on the scale marked on the axis OX (or OY) if desired, instead of on scale OZ, by running the eye vertically (or horizontally) from the point at which the line joining the angle counts on OX and OY cuts OZ.

The same procedure could be adopted with Mr. Hicks' nomograph, except that a line parallel with the counts scale at 70° to the horizontal is required, instead of the vertical line that is indicated in my sketch.

D. C. SNOWDEN

Leeds, England



Simplified nomograph for combined yarn counts

FIRST REVOLVING-FLAT CARD

Dear Editor:

I read from cover to cover your report of the American Textile Machinery Ex-

(Continued on page 222)

3 FEATURES

to remember when you want a

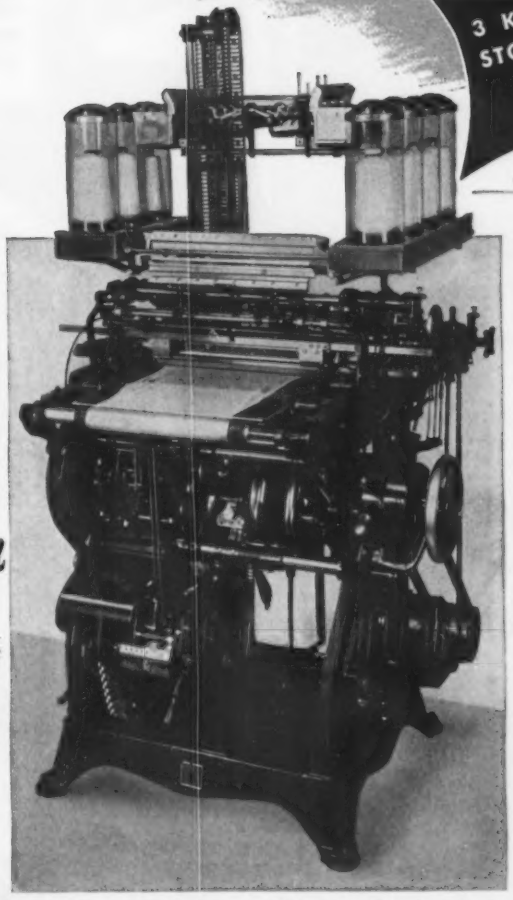
Superior

HOSIERY MACHINE

1 MAKES STOCKINGS OF FINEST GAUGES

2 PERFECT RESULTS WITH SILKS, COTTONS, etc.

3 KNITS ENTIRE STOCKING IN ONE CONTINUOUS OPERATION



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Single Unit.

Full Fashioned

HOSIERY MACHINE

WILDMAN

. . . The very essence of top production for knitting of synthetic yarns, cotton, lisle and silk yarns is represented in this **WILDMAN KNITTING MACHINE.**

Made in 54 and 66 gauge with a 15 inch needle bar, and in two styles for knitting the round heel: Model TWD and Model TWS. Operating speed: 70 to 80 courses per minute depending on the yarn, gauge and other conditions. Machine weight: 890 pounds net and 1170 pounds gross, packed for export in a box 34" x 43" x 55".

Write today for complete information.

WILDMAN MFG. CO. NORRISTOWN, PA.

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BANNER

Dial-Rib Machine

Now you can knit complete anklets with true-rib tops in one automatic operation! Hand transfer problems can be completely eliminated.

The Banner "All-In-One" is a new, automatic knitting machine for high quality, high speed production of genuine rib top anklets. It uses regular latch needles on dial and cylinder. 5-color horizontal stripes can be utilized in either top or foot, or in combination.

For truly profitable volume on true-rib top anklets, contact the Hemphill Company today for complete details on the Banner "All-In-One" Dial-Rib Machine.

MODEL HDR-300
BANNER "All-In-One"
DIAL-RIB MACHINE

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and the Advertisements

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. . . to send an inquiry to the Question & Answers department

. . . to request further information on equipment described in this issue.

Cards require no postage . . . but be sure to give your name, title, mill connection, and address (particularly essential in the case of the bottom card).

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WRITE PAGE NUMBERS

. . . to get more information on any piece of equipment described in the Textile Equipment News section. If more than one item appears on the page, see the table of contents on page 3 to obtain an identifying letter which also must be included

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This Card Expires March 31, 1951

Outstanding TRADE LITERATURE *Free for the Asking*

NO REPEATS . . . Listed here for January are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

PROCESS EQUIPMENT

An individual card drive for cotton cards is featured in a bulletin issued by The American Pulley Co. The American individual card drive has been modified to include a centrifugal clutch on the driven sheave, and the entire unit is mounted on the cylinder-bearing pedestal. No special motor or starting mechanism is needed with the new drive. **(F-1)**

The Titan warp-tying machine is described in a brochure published by the Titan company. The Titan ties up to 16,000 knots per hour and has an effective width of up to 8 ft. or more in a single bite. It can be used on cotton, rayon, woolen, worsted, nylon, and natural silk. **(F-2)**

The Hygrolit yarn-conditioning system is described in a series of bulletins issued by Kearny Mfg. Co., Inc. The Hygrolit conditioning system conditions the yarn by the controlled application of a cold-water solution, containing Hygrolit conditioning chemicals, which it is said cost 0.036¢ per pound of yarn. **(F-3)**

Controlled fabric conditioning by the Hygrolit process is described in a bulletin issued by Kearny Mfg. Co., Inc.

The model P-3 machine has a maximum working width of 72 in., with a production range of 10 to 25 yd. per min., depending upon the weight of the material. **(F-4)**

A yarn-singeing frame with electric or gas burners is described in a bulletin published by Fr. Mettler's Sons. The machine is designed to singe and wind yarns and threads—particularly, cotton, wool, silk, etc., from bobbins, spools, tubes, or cones. **(F-5)**

A ring spinning frame with movable spindle rail is described in a bulletin issued by Joh. Jacob Rieter & Co. Ltd. The movable spindle rail is said to give an almost unvarying balloon and even yarn tension. The frame has central lubrication, pneumatic yarn suction for broken ends, and automatic underwinding and stopping. **(F-6)**

Cotton yarn-manufacturing equipment is pictured in a booklet issued by Joh. Jacob Rieter & Co. Ltd. The equipment includes opening machines, pickers, cards, combers, draw frames, roving frames, spinning frames, and twisters. **(F-7)**

A multi-motor slasher drive is described in a booklet published by Westinghouse Electric Corp. The drive eliminates the mechanical friction clutch, bevel gears, and line shafting; and is said to give uniform warp tension at all times. **(F-8)**

The "Molten-Metal" process of continuous dying, developed by Standfast Dyers and Printers Ltd., is described in a booklet published by that firm. In this process, heat and pressure are applied by molten-metal in which dye-impregnated fabric is immersed. **(F-9)**

The Hermas loop clipper is featured in the October issue of *The Cloth Room Spotlight*, published by Hermas Machine Co. The loop clippers, working together with Hermas shears, are used to remove selvage-filling floats. **(F-10)**

A cloth-singeing frame is described in a bulletin issued by Fr. Mettler's Sons. This machine is equipped with four burners for all kinds of gas. It permits singeing four times on one side or twice on each side of a fabric in one pass. It is designed for all types and weights of fabrics. **(F-11)**

A parallel drum winder and doubling frame is described in a folder issued by Fr. Mettler's Sons. The machine is designed for winding two to six parallel winds on cones or cheeses from bobbins or pin cops. **(F-12)**

CONTROL EQUIPMENT

Fiber fineness and maturity data are obtained from tests on a new machine, the Arealometer, manufactured by Special Instruments Laboratory, Inc. A bulletin published by that firm describes this new testing machine and its operation. **(F-13)**

"Air-Conditioning for the Textile Indus-

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try" is the subject of a booklet published by White & Co., Inc. The booklet gives the advantages of controlling humidity and temperature, and it describes the Jackson automatic self-cleaning atomizer. **(F-14)**

The Fielden type-ADR Drimeter is described in a brochure issued by Fielden Instrument Corp. The new Drimeter is now manufactured in this country and supersedes the old type B2. The Drimeter is installed on fabric-drying machines and warp-sizing machines to indicate to the operator the moisture content of the finished product. **(F-15)**

The Pacific evenness tester is described in a 19-p. booklet published by Anderson Machine Shops, Inc. The tester is designed to test evenness and to determine the weight of sliver, roving, and yarn from 4.5 oz. per 5 yd. wool sliver to 100s worsted yarn, or the equivalent in any other fiber. The machine has an electronic recorder. **(F-16)**

Tension controls are featured in a folder published by Walter Kidde and Co., Inc. Kidde tension compensators are manufactured in three models: standard, for quilling, twisting, and doubling; warp, for warpers; and twin disk, for high twist yarns. **(F-17)**

The model EL-314 uniformity analyzer is described in a bulletin issued by The Brush Development Co. The analyzer is an electronic instrument designed to measure and make a permanent record of the irregularities in weight per unit length of yarn, roving, and sliver. This instrument is calibrated for cotton and wool, but with only minor changes may be adapted for the measurement of other materials such as nylon and rayon. **(F-18)**

The Norcross recording Viscometer is described in an 8-page brochure published by Norcross Corp. This instrument is designed to measure, record, and (when desirable) control solution viscosities from 1 to 200,000 centipoises. The recorder can be mounted either locally or at any remote location. **(F-19)**

"Taylor instruments for cotton mills" is the subject of a bulletin published by Taylor Instrument Co. Featured in this bulletin is a size-cooking temperature-control system, storage-kettle control system, size-box control system, automatic cylinder-control system, and systems for dyeing machines and dryers. The bulletin gives the advantages and operation of each of these systems. **(F-20)**

Control systems for woolen and worsted mills are described in a bulletin published by Taylor Instrument Co. Systems featured are for scouring trains, carbonizers or dryers, storage kettles, size cooking, size boxes, slasher dryers, continuous crabbing, dyeing, and semi- or full-decating. The advantages and operation of each of these systems are covered. **(F-21)**

A textile psychrometer, called the Kearny Midget Psychrometer, is described in a bulletin issued by Kearny Mfg. Co. This instrument, which operates on standard dry-cell batteries, measures on the spot the moisture content in bales, slivers, roving, yarns, and fabrics. **(F-22)**

The Oxy static neutralizer is described in a brochure published by American Textile Engineering, Inc. The neutralizer is designed to eliminate static charges in a wide variety of textile machines such as cards, drawing frames, roving frames, spinning frames, winders, looms, tenter frames, slashers, and warpers. **(F-23)**

An automatic recording dynamometer for cotton, silk, rayon, and wool yarn testing is described in a folder issued by Fabbriche Elettrotecniche Riunite. The tester automatically records and

- Eliminate replacement cost
- Entirely new construction
- Indestructible
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- Minimum Resistance—Open flow to package
- Interchangeable for all sizes of dye tubes

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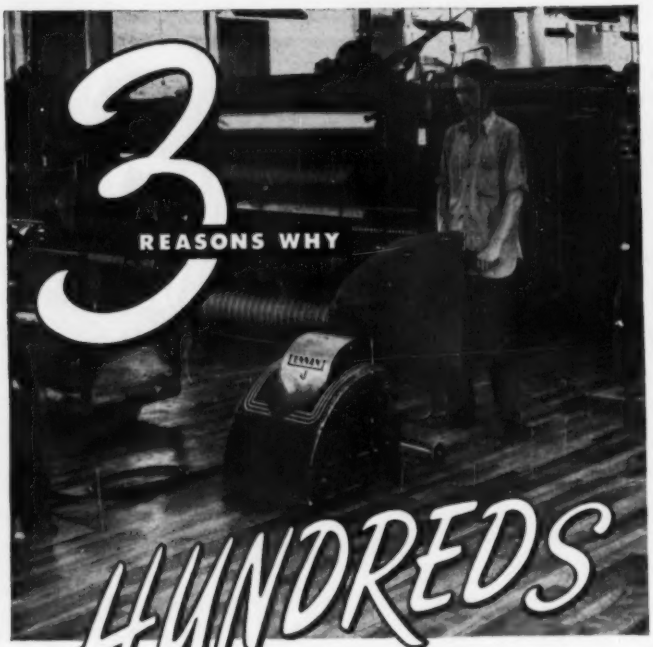

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OF MILLS USE THE TENNANT *System*

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Its cost-saving performance and ease of use have established TENNANT as *THE accepted floor maintenance system of the U.S. textile industry.* This unique acceptance is due to these practical advantages . . .

1. CUTS FLOOR MAINTENANCE COSTS

You save 4 ways—in *manhours,* by cleaning faster in one operation with 1 man; you cut *accident costs* by DRY-cleaning (no wet, slick floors). You avoid needless *floor repair costs* . . . and reduce *stock losses* from snags, splinters and soilage.

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Works like magic! You get rid of dark, rough, oil-soaked fibers . . . and have a smooth, bright, *hardened* floor surface that resists dirt. Stays clean longer! Ends costly, harmful scrubbing and wet-mopping.

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tests the elongation and breaking point of yarns. **(F-24)**

SUPPLIES AND CHEMICALS

Sodium acetate is featured in a bulletin published by Niacet Chemicals Div., U. S. Vanadium Corp., Union Carbide and Carbon Corp. Sodium acetate is used in the manufacture of dyestuffs and as a textile mordant. **(F-25)**

"Quality Stripping—A Way to Lower Blend Costs" is the subject of an article in the November, 1950, issue of *Royce Reporter,* published by Royce Chemical Co. The effect of three Royce methods of stripping on the tensile strength of shoddy cloth is evaluated in this article. **(F-26)**

Permaproof 300 washable fabric-treating compound is described in a technical bulletin published by Treesdale Laboratories, Inc. Permaproof 300 is designed to make cloth completely flameproof, mildew-proof, shrink-resistant, and to increase durability. **(F-27)**

Potassium acetate is featured in a bulletin published by Niacet Chemicals Div., U. S. Vanadium Corp., Union Carbide & Carbon Corp. Potassium acetate is used in certain resinous compositions and as a dyestuff intermediate. **(F-28)**

A parts catalog and lubrication chart for the model SCP-51, solid-color pattern knitting machine has been published by Hemphill Co. The catalog contains 71 pages of keyed diagrams and complete ordering instructions. **(F-29)**

Special textile brushes used in carding, spinning, and weaving operations are illustrated in a poster-size brochure issued by The Industrial Div., Fuller Brush Co. The brushes, reproduced one-third actual size, are arranged according to use, thus eliminating the task of searching through many pages of a larger catalog. **(F-30)**

Heddles with a rectangular heddle eye, all-metal harness frames, drop wires, and a lug-strap bracket, all marketed under the name of Slide-tex, are described in a booklet published by H. J. Theiler Corp. The booklet illustrates and describes each of these products. **(F-31)**

Paper pulleys are featured in a catalog published by Rockwood Mfg. Co., Inc. Given are instructions on how to specify pulleys to be made to order, specifications for stock size pulleys, and prices for stock and special items. **(F-32)**

The Blanchard quarter-turn locked adjusting screw for silk-loom shuttle tension eyes is described in a folder published by Watson-Williams Mfg. Co. This adjusting screw is designed to allow you to set the exact tension you want on filling, and to keep it there. **(F-33)**

A soda-ash manual, containing 64 illustrated pages and compiled by the technical staffs of the Pittsburgh Plate Glass Co. and Southern Alkali Corp., has been published by the Columbia Chemical Div., Pittsburgh Plate Glass Co. The volume gives a completely detailed history of soda ash, and includes chapters on forms and grades as well as on unloading and handling. **(F-34)**

Rot-proofing and waterproofing batches and solutions, marketed under the name of Prexotex, are described in a bulletin published by Croda Ltd., The products are primarily for ropes and cordage. **(F-35)**

A cold-applied waterproofing compound, Tristex, is described in a bulletin published by Croda Ltd. Tristex is a single-treatment waterproofing compound for hard and soft fibers. **(F-36)**

Batching compounds for sisal, jute, and

the DIRTIER the better for LAN-O-KLEEN!

DIRT that's really hard to remove . . . that's deeply imbedded in workers' hands . . . that irritates cuts and abrasions—directly affects production figures! Think of the materials your present cleaner won't remove: graphite and metallic dust . . . heavy grime and lubricants . . . even common soil and office dust—no matter how hard you scrub!

LAN-O-KLEEN, the industrial soap powder, is designed for "heavy-duty" dirt removal. A fine corn meal base sponges out the pores . . . while thick suds sweep away surface dirt. As water is added, soothing Lanolin spreads over the skin, leaving hands fresh-feeling and clean as a whistle. Its soothing emollient action won't aggravate cuts and bruises. Further, Lan-O-Kleen and the sturdy Lan-O-Kleen dispenser are a dollar-saving combination—as a West representative can easily demonstrate.

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soft hemps are described in a series of bulletins published by Croda Ltd. These compounds, known as Velotex, Brotex, and Lanotex, are available for overseas shipment as concentrates. **(F-37)**

ENGINEERING DATA

The Charlotte repair shop of Whitin Machine Works is featured in a booklet published by that firm. The booklet outlines the history of the Charlotte shop and explains the services available there. **(F-38)**

Centrifugal clutch-couplings are featured in a new bulletin published by Centric Clutch Co. The Rawson coupling is designed for slow, smooth acceleration during starting. It can be adapted to existing equipment. **(F-39)**

"Making the Most of Stainless Steels in the Textile Industry" is the title of a 32-p. booklet published by Crucible Steel Co. of America. The keynote of the booklet is economy through the use of stainless steel. **(F-40)**

Brine equipment is discussed in a 15-p. booklet published by Myles Salt Co. The booklet describes and explains the operation of Myles double-filtration brine equipment. **(F-41)**

An alternating-current variable-speed drive is featured in an illustrated booklet published by Louis Allis Co. Known as the Adjusto-Spede, this variable-speed drive is available in a wide range of sizes and speeds. **(F-42)**

American drives are the subject of a technical catalog published by American Pulley Co. Featured are the individual cotton-card drives, short-center drives, multiple V-belt drives, variable-speed V-belt drives, flat-belt drive equipment, conveyor pulleys, and a hold-back device. **(F-43)**

The Foote Bros.-Louis Allis Gearmotor is described in a bulletin published by Louis Allis Co. The Gearmotor is available in ratings of 1 to 75 hp. with single, double, and triple reduction. **(F-44)**

Loom motors are discussed in a bulletin published by Louis Allis Co. The bulletin primarily discusses loom-motor design problems and the Louis Allis analysis of the problems. **(F-45)**

Single-phase repulsion motors are discussed in a bulletin published by Star-Kimble, Motor Div. of Miehle Printing Press & Mfg. Co. These continuous-duty, varying-speed motors are available in sizes from 1/6 to 3 hp. **(F-46)**

An automatic reed- and heddle-brushing machine, known as the Robot, is described in a bulletin published by Sam. Vollenweider. This machine automatically cleans and polishes reed wire and heddle eyes with brushes that revolve at 1,200 rpm. **(F-47)**

Stainless-steel jacketed tanks are featured in two bulletins published by Metal Glass Products Co. These tanks, known as San-I-Tanks, are designed for all types of heavy or light processing when constant agitation is desired. They can be used for either cooking or cooling. **(F-48)**

Lincoln standardized lubrication systems are discussed in an illustrated catalog published by Lincoln Engineering Co. The catalog outlines the features of each type of lubrication system and shows, with the aid of illustrations, typical applications. **(F-49)**

Pre-lubricated bearing design in electric motors is discussed in a bulletin published by Reliance Electric & Engineering Co. The bulletin contains descriptive sketches and cutaway drawings of the improved double-shielded bearings and their bracket mounting. It also has a check list which compares other bearing arrangements with the Reliance design. **(F-50)**

YOU CAN BE **SURE**.. IF IT'S

Westinghouse

The time to fight fire is *before* it starts. A fire caused by lint and dust reaching the contacts of an ordinary loom motor starter *could* destroy your entire mill. The answer to eliminate this hazard is the new Westinghouse Gasketed, Lint-Tight Loom Motor Starter. Designed in collaboration with the engineering division of the Associated Factory Mutual Fire Insurance Companies and leading textile manufacturers, it is aimed specifically at reducing weave room fire hazards.

Lint and dust is kept out! A special Neoprene gasket forms a positive, continuous seal between the box and cover. Pressure from the cover clamp makes sure every crevice is filled with the pliable Neoprene gasket . . . positive assurance that combustible elements cannot enter the enclosure. Thus, one major cause of weave room fires is stamped out before it can start!

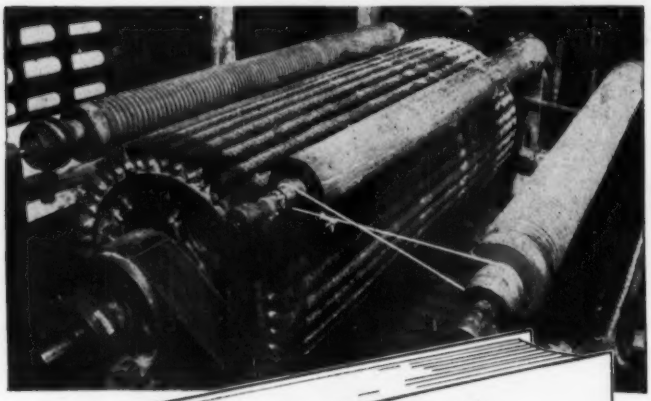
When you specify Westinghouse you get other valuable "extras", too—Positive Disc-Type, Bimetallic Overload Protection with no fuse replacements . . . "De-ion®" Arc Quenchers . . . an all-new, rotary handle mechanism with no possible way for lint to enter the enclosure—that cannot be kicked or bumped "on" or "off" inadvertently . . . and line terminals either at top or bottom upon specifications.

Ask your nearby Westinghouse representative to show you the new Gasketed, Lint-Tight Loom Motor Starter on your desk top! Ask him for a copy of B-5256 or write Westinghouse Electric Corporation, Box 868, Pittsburgh 30, Pennsylvania. J-30039

Westinghouse

LINT-TIGHT

LOOM MOTOR STARTERS



THE CASE OF THE
RHODE ISLANDERS
WHO DIDN'T LIKE
SCALLOPS

Thies Dyeing Mills Replacing Old Brushes That Wear in Scallops With Fullergript Brushes . . . Find Fullergript Has Two Advantages

In general, Rhode Islanders are quite fond of scallops . . . fried scallops, that is. But when it comes to scallops in brushes on so delicate an operation as yarn dressing . . . well, that's another story. And that is one reason why Thies Dyeing Mills of West Warwick, R. I. are installing Fullergript brush strips on their yarn dressing machines as the old wood-block, tufted brushes wear out. They have found that Fullergript has two definite advantages. In the first place, Fullergript wears evenly. The old style tufted brushes wore in scallops. The low spots in such brushes do not touch the strands of yarn strung above the brush drums. Consequently, the yarn does not get thoroughly polished, and the glaze is not up to standard. This difficulty is being overcome by installing Fullergript on the brushing drums on each machine.

The second advantage of Fullergript is its long life. After seven years' experience, production executives at Thies Dyeing Mills have found that Fullergript is saving them money.

Similar economies with Fullergript are available throughout the textile industry. For further information send for *free* booklet... FULLERGRIPT POWER-DRIVEN BRUSHES. No obligation . . . write *today*.

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Questions AND Answers

Poor Loomfixing Causes Jerked-in Filling

Technical Editor:

We are making a heavy pebble cloth on C&K C-4 looms and Draper Modified D and P looms. We find that it is costing us a great deal to inspect this cloth because of jerked-in filling.

Can you suggest ways to correct jerked-in filling? (9414)

The first step is to bear down on your loomfixers. Jerked-in filling is usually worse on heavy constructions, such as your pebble cloth; and there are a few things that the mill can do to help correct the fault. But basically, preventing jerked-in filling is a job for the loomfixers.

In general, three steps should bring your defects under control:

First, if you don't have them already, install Stafford thread cutters on your Draper looms. If you do have them already, check them and the other filling cutters, catchers, feelers, etc., to make certain that they're working properly.

Second, see that all parts that the filling comes into contact with are smooth and permit the filling to work freely over them.

Third, see that the loom is timed properly.

In a nutshell, most jerked-in filling results from (1) faulty filling cutting, (2) snags, or (3) poor timing.

Here is a checklist that might be useful in combatting your trouble:

For C&K looms

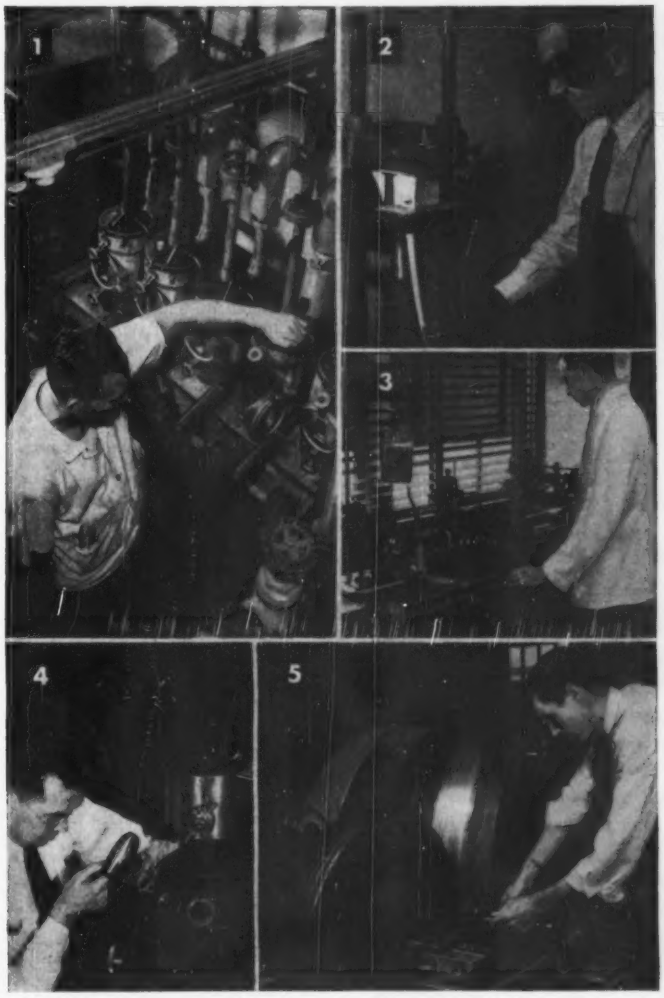
1. Set and time the pick motion
2. Keep a good groove, eye, and bristle in the shuttle
3. Set the meter cam so that it checks the shuttle in the box end to prevent running the binder too tight
4. Wrap the mouthpiece with flannel or slasher-blanket cloth to hold the filling while the shuttle is out of action
5. Use a filling separator to keep the different yarns in the box separated

For more information, write direct or use Reader Service post card.

Rayon Reports

Prepared Monthly by American Viscose Corporation, New York, N. Y. JANUARY, 1951

New booklet tells the story of Avisco chemical research



1 — Pilot plant cellulose acetate spinning machine for the evaluation of experimental acetate rayons.

2 — Lab-scale steeping press used in preparing small batches of soda cellulose.

3 — Spinning a solution of man-made resin on compact laboratory scale equipment.

4 — Delving into nature's innermost secrets with the Department's electron microscope.

5 — Putting a tire containing experimental rayon cord to the test.

The work of the Avisco Chemical Research Department is featured in a new illustrated booklet which has just been released. "Chemical Research at American Viscose" covers the ideas back of the founding of the Department and contains a brief account of the objectives and organization of this important branch of Avisco.

The Chemical Research Department has participated in the creation and improvement of many processes and products essential to the textile industry. Its contributions to such products as high tenacity yarns, rayon tire cord and crimped staple are mentioned.

The booklet, "Chemical Research at American Viscose," is of interest to everyone taking part in the steady improvement of modern fabrics. Copies are available on request.

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To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

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Questions and Answers

(Continued)

6. Keep quill cans under the loom as near empty as possible so that the shuttle and filling tail have plenty of room to fall out of the loom on the transfer

For Draper looms

1. Use Stafford thread cutters
2. Check cutters, temples, and temple knives every day to see that they are correctly set and are working properly
3. Keep the shuttle boxing properly
4. Keep the screw in the back of the picker well imbedded so that there will be no rough edges
5. Be sure that the picker is parallel
6. Keep the leather in the box front and the leather bumper in good condition
7. Dress splinters and rough spots off the picker stick from the check strap up to the picker
8. Check shuttle feelers daily to see that they hold and cut properly
9. Check filling forks to guard against hanging
10. Use a third-end catcher to keep the shuttle from dragging an extra end into the cloth
11. Maintain enough tension on the filling to hold it up and in the shuttle groove
12. See that the loom is timed properly
13. Keep the lay smooth
14. Keep bolts in the lay tight
15. Avoid using too much power on the loom

Formulas for Backsizing Are Very Numerous

Technical Editor:

Could you give me a formula for preparing backsizing solutions for viscose rayon, acetate rayon, and cotton-back rayons?

Would you recommend the use of clay in each case? (9413)

There are various and exceedingly numerous preparations used as backsizing solutions. They vary according to the type of fabric to which they are applied and the end use of the fabric.

A back-filling mix for a cambric may be made from 18 lb. of dextrin, 25 lb. of wheat starch, 25 lb. of farina, 90 lb. of China clay, 50 lb. of calcium sulphate, and 2 gal. of Turkey red oil in 100 gal. of water, together with antiseptic and "blue."

A formula for a shirting finish includes 60 lb. of farina, 90 lb. of dextrin, 70 lb. of China clay, 4 lb. of

For more information, write direct or use Reader Service post card.

DALGLISH THE TENTER PEOPLE

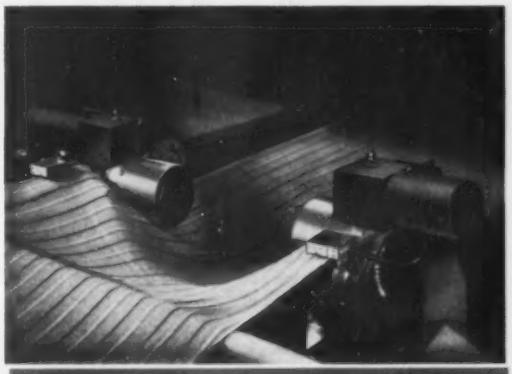
KING ROBERT THE BRUCE set the fashion in perseverance six hundred and fifty years ago—he took the hint from the spider and kept on trying.

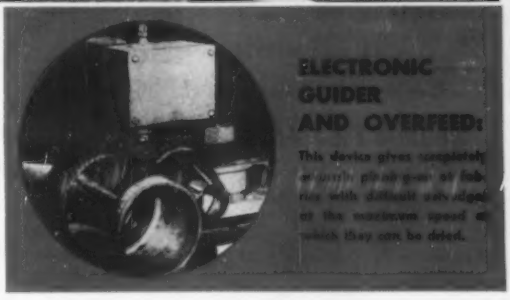
We cannot trace this firm's history back to those days, but we like to think that our persistence in preaching the value of pin tenters to American finishers shows that the same good red blood still flows in our Scottish veins.

Pin tenters are now accepted in the U.S. as essential for the correct finishing of rayon.

Ni sinn gach oidhirp a chunail suas ar n-aird inbhe mar luchd deanamh earr-fhighe.

Translation from the Gaelic of minute of Dalglish board meeting: We will make every effort to maintain our supremacy as tenter makers.





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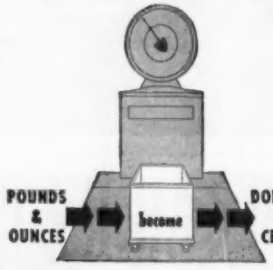


Errors made at the scale stay wrong forever. There is no chance to recheck; either the material has been shipped or has lost its identity in the general stock. You've got to be *right*—weigh it right—Toledo Printweigh means *accurate* weights *accurately* recorded! Send for bulletin 2021 on modern weight control. Toledo Scale Company, Toledo 1, Ohio.

Guard Costs with **TOLEDO** *All the Way*

Questions and Answers

(Continued)

coconut oil, 70 lb. of calcium sulphate, and 4 gal. of Turkey red oil in 100 gal. of water.

A formula that may be used for the preparation of book cloth by the backfilling method is as follows: 18 lb. of potato starch, 80 lb. maize starch, 32 lb. of dextrin, 43 lb. of sulphonated tallow softener, 12 gal. of China clay (4 lb. per gal.), 4 oz. of Ultramarine, and water to 100 gal.

The following is suggested for cotton twills: 22 lb. of farina, 22 lb. of wheat starch, 90 lb. of China clay, and 2 gal. of Turkey red oil in 100 gal. of water.

The production of a crisp finish on spun-rayon fabrics may be accomplished by using a mixture of 5 lb. of potato starch in 45 gal. of water to which has been added 2 qt. of 40% formaldehyde solution and 2 qt. of sulphonated oil in 5 gal. of water.

The formulas are almost endless. There are many books on textile-finishing that cover the subject of backsizing very well. You probably would do well to obtain one of them and keep it handy for reference.

U. S. Weave-Room Humidity Puzzles European Weaver

Technical Editor:

A recent visit to the United States convinced us that there is a great difference in air-conditioning practices in that country and in Europe. In regard to cotton weaving, it seems to be normal in America to have a relative humidity as high as 80 to 90%. In Europe, 65% is common, and in many cases no humidifying devices are in use.

If we are well informed, the tensile strength of cotton yarn is highest with 7% regain, which means that higher and lower regain will lower the tensile strength. For that reason, here, as well as on your side of the Atlantic, it is standard to have 7% regain in slashed yarn. The corresponding relative humidity of air is 65%.

In the case of American weaving sheds, with their 80 to 90% r.h., the yarn on the loom will probably get a regain of 8 or 9%, which means that the strength is lower and the warp breakage will be higher. On top of that, the working conditions are unfavorable and the conditioning machinery is very expensive.

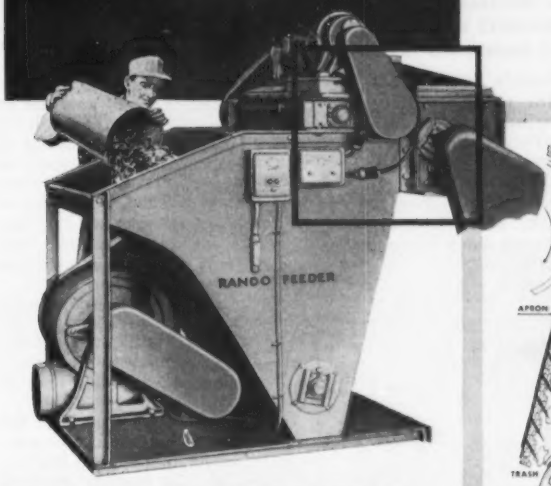
We would appreciate it if you can explain these facts to us. (9412)

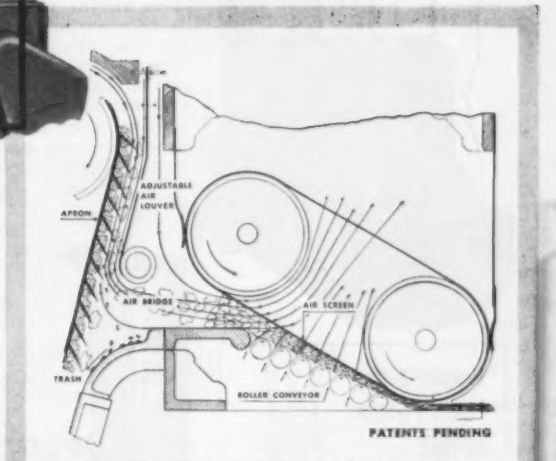
As you say, it is not at all uncommon in the United States to find weave-room humidities as high as 80 to 90%. In many mills, though, humidity is lower.

The relative humidity run depends largely on the cloth construction being woven. Heavily sized warps are

NEW TEXTILE FEEDER...

Delivers waste and staple fibers uniformly...





AIR BRIDGE AND SCREEN BOX DETAILS

RANDO-FEEDER*

The RANDO-FEEDER was developed with simple principles and construction features to (1) uniformly feed fibers lengthwise and crosswise into the RANDO-WEBBER, and (2) capably handle a wide variety of low cost, short staple waste fibers.

Whether the hopper is full or nearly empty the uniformity of feed remains constant, because of the overfeeding feature of the apron to the air bridge. Tests show the total deviation of lengthwise uniformity to be under 5%. Evenness of fiber flow made possible by the RANDO-FEEDER may have an important bearing on the uniformity of the finished yarn.

EXCLUSIVE AIR BRIDGE FEATURE:—The Air Bridge serves two important functions: (1) It allows only the proper amount of loose fiber to cross . . . one of the key factors contributing to uniformity. (2) The Air Bridge is an effective cleaning device. It eliminates foreign materials, tramp metals such as steel and brass, wood and heavy waste. These materials are deposited in the trash box at the base of the machine.

These features may suggest broad usage of this FEEDER in the textile industry.

We invite inquiries from mills wishing to improve their present feeding methods and to see a demonstration of both the RANDO-FEEDER and RANDO-WEBBER.

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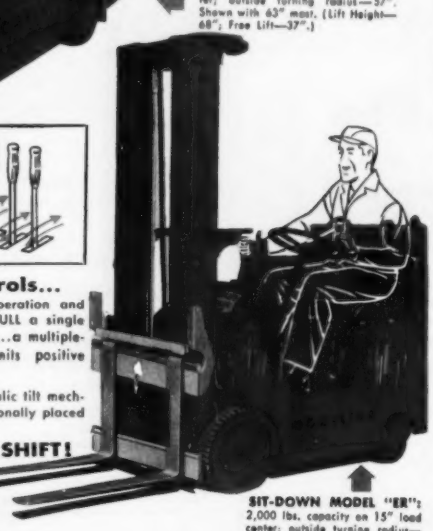

SIT-DOWN MODEL "ER": 2,000 lbs. capacity on 15" load center; outside turning radius—63"; shown with 83" mast. (Lift Height—108"; Free Lift—57".)

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Questions and Answers

(Continued)

usually run with high humidities, and lightly sized warps are run with humidities as low as your 65%.

In general, mills in this country regard the effect of humidity on warp size as more important in the weave room than its effect on warp yarn strength. Cloth construction, slasher-size formula, and weave-room humidity are closely related factors that are given very close attention in all mills. It would be unwise to change either of the three to any marked extent without keeping a close watch on the other two.

In most mills, the humidity run is determined primarily by yarn pliability rather than strength. If humidity is low enough to permit warp size to dry out too much, the yarn will be stiff and brittle. Excessive shedding of size and yarn chafing will occur at the loom. End breakage will increase.

On the other hand, if humidity is too high, the warp size will be tacky; ends will tend to stick to each other, and size will rub off. This condition may also increase end breakage.

So the practice in nearly all mills is to maintain humidity at a safe point between the dry, brittle stage and the tacky stage. A variation of a few percentage numbers does not make a great deal of difference.

In this country, we regard 7% the standard regain for cotton. We interpret "standard" to mean only that cotton will assume a moisture regain of 7% when it has been exposed long enough to "standard conditions" of air—which have been set at 65% relative humidity at 70° F. Our "standard regain" for cotton does not mean that the strength of the cotton fiber is higher at that regain than at any other.

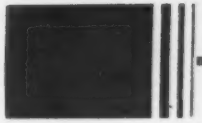
Likewise, we consider the standard regain of cotton yarn as 7.5% and cotton cloth 6.5%. Again, it is not meant that yarn is stronger at a regain of 7.5% than at any other regain, or that cloth is stronger at 6.5%. Both will continue to gain strength as they gain moisture.

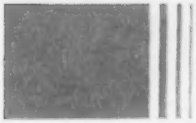
Standard conditions (65% r.h. at 70° F.) are only conditions of the humidity and temperature of air generally accepted for testing cotton, yarn, and cloth. Since cotton is sensitive to air conditions, it is necessary (or at least highly desirable) to test it under some standard conditions so that some of the variables will be eliminated.

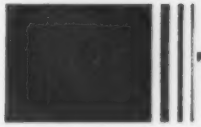
It is characteristic of any cotton package that moisture will penetrate only a very few layers of the package, regardless of the length of time it is exposed to air conditions.

A warp running in a loom will be

3 new colors







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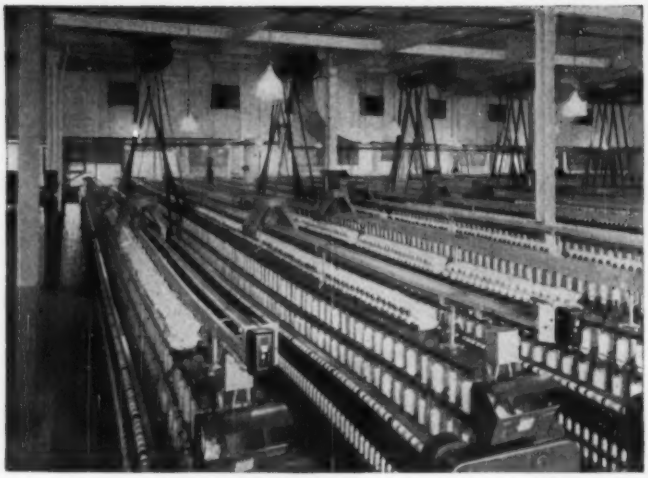
Antilustrole* dullers • Appramine* cationic softeners • Appretole* anionic softeners • Eumercia* mercerizing assistants • Formaset* textile resins • Lanole* tar and grease removers • Organosol coatings for textiles and paper • Plastisol for coating and molding • Setole* textile resins • Sulfanole* synthetic detergents • Warcofix* color fixatives • Warco* GF1 gas fading inhibitor • Warcolene* finishing oils • Warconyl* fire retardants • Warcosan* wetting and rewetting agents • Warcosol* penetrants • Weave-Lok* non-slip finish.

* Trade Mark Reg.



The Cost of Air Conditioning

At Goodyear's tire cord plant in Cedartown, Georgia, is an installation of Central Station Certified Climate. After twenty-four years' practically uninterrupted service, it continues to deliver right up to the mark — "conditions as good as those found anywhere."

At Cheney's Manchester, Connecticut plant, there is another. It is in its forty-first year. Perhaps the attachment is so strong these installations are retained as souvenirs. But there is a suspicion that they earn their keep.

You can't afford Certified Climate? You could once build and equip a textile mill for the price of its air conditioning today? Sure—but would you want that kind of a mill? And how much does anything cost that pays for itself in a year or less as Certified Climate has been known to? And lasts so blamed long? Perhaps we try too hard!

ParksTurbo Cleaners in the Goodyear picture above, soon to be joined by Up-draft Cleaners operating on same track.

Parks-Cramer Company

Fitchburg, Mass. PARKS Certified Climate Charlotte, N. C.

almost unaffected by the weave-room humidity except on the outer two or three layers of yarn and while the yarn is weaving through the loom. Except on slow-weaving warps, it is doubtful that the warp yarn will be exposed to the air long enough to assume the 8 to 9% r.h. you mentioned. If it does, the effects will be advantageous. Any reasonable increase in moisture above the 7 to 7½% left in the yarn at the slasher will increase the strength and pliability of the yarn. The limiting factor is tackiness of the size.

Slanting Cloth Table Used Most for Inspecting

Technical Editor:

What set-up do most mills prefer for inspecting cloth? Do they prefer ordinary overlighting, or is the trend toward lighting through the cloth? (9415)

Two types of examining perches are generally used: the slanting inspecting table and the perch in which cloth travels vertically.

A slanting table, arranged so that the cloth travels from the lower edge to the upper edge (away from the inspector) and with concentrated overlighting, is probably the set-up used by most mills.

The set-up next most used is very likely the slanting table and overlighting, with the cloth traveling from top to bottom (toward the operator).

The direction of cloth travel is largely a matter of opinion. A cloth inspector can do efficient work in either case, once she has become accustomed to it.

The second type of perch widely used is an upright frame arranged so that the cloth travels in a vertical path in front of a seated inspector. Cloth travel is usually upward.

This type of perch lends itself easily to either overlighting or underlighting.

Most mills prefer overlighting. There have been complaints of eye strain and increased fatigue where underlighting was used. However, some mills are using it, and like it.

The chances are that much of the objection to through lighting is a result of the quality of light used. As you know, the light companies have made tremendous progress in the quality of light for specific uses in the last few years. Undoubtedly, they will come up with a light that can be used for underlighting cloth that will not cause complaints by the inspectors.

Another Important Instrumentation Development by Beckman . . .

- ✱Greater Compactness
- ✱Higher Accuracy
- ✱Lower Sample Consumption
- ✱Maximum Convenience

THE NEW BECKMAN
Flame Photometry Attachment

FOR BECKMAN "DU" SPECTROPHOTOMETERS

To meet the steadily growing interest in flame spectrophotometric methods, Beckman engineers have developed a new Flame Photometry Attachment that sets greatly advanced standards of compactness, convenience, accuracy and simplicity.

Used with the Beckman "DU" Spectrophotometer and standard oxy-hydrogen or oxy-acetylene equipment, it combines the unusually high accuracy and resolution of the well-known Beckman "DU" with the conveniences of flame spectrophotometric methods, providing an instrument capable of the quantitative determination of more than 40 elements, including heavy metals and rare earths, as well as the alkali metals.

The atomizer-burner of this new instrument is much smaller, simpler and more trouble-free than previous designs. Made of Pyrex with a straight, large-diameter, noble-metal atomizer tube discharging directly into the flame, it will spray even cloudy or highly concentrated solutions indefinitely without clogging or "drifts".

Other important features of this new Beckman development are outlined at right. Best of all, this new instrument is available at a new low price for equipment of this quality. Your nearest authorized Beckman instrument dealer will gladly supply full details—or write direct!

BECKMAN INSTRUMENTS INC

SOUTH PASADENA 12, CALIF.

Factory Service Branches: Chicago • New York • Los Angeles

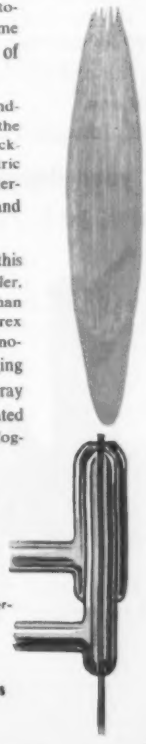


Illustration at right shows atomizer-burner actual size.

Outstanding Features of the New Beckman Flame Photometry Attachment

- Sample beaker is supported in a unique mechanism that swings the beaker outside the case for easy filling, or swings it back into position below the burner tube. Further, as the beaker is raised into position below the burner, it automatically tips so that sample solution is drawn from lowest point in beaker. Thus, complete analyses can be made with even extremely small samples.
- The atomizer requires only about 2 ml of sample solution per minute, and a sample of 1 to 3 ml is ample for determination of several constituents.
- Fuel consumption is very low—about 5 cu. ft./hr. for acetylene, 8 cu. ft./hr. for oxygen, 20 cu. ft./hr. for hydrogen.
- The hot flame, coupled with the high resolution of the "DU" Spectrophotometer, permits unusually narrow band widths to be used—less than 10 millimicrons for most determinations. Accuracies of 0.5% or better are obtainable.
- Sample concentration is unimportant (provided it is above the lower detectable limit) permitting maximum versatility and convenience in making analyses.
- Although the sensitivity of most elements is improved when the elements are in water solution, nonaqueous solutions are as easily handled as water. Even combustible solvents can be used—and in fact, organic solvents frequently increase sensitivity of the readings.
- The atomizer-burner, sample-positioning device, focusing mirror and adjustments are all unitized into a compact, cast-metal housing. All necessary regulators and gauges (except standard regulators on fuel and oxygen tanks) are conveniently mounted on a separate control panel.

Write for complete details on this important new Beckman advancement!

 For more information, write direct or use Reader Service post card.

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G.H.Q.
BEMIS

Burlap general headquarters will prove to be the dependable, convenient, ready-to-ship source for your burlap piece goods requirements, whether you need a bale or several carloads . . . and whether you want the famous Angus that only Bemis imports, or one of the standard grades.

Use BEMIS TITE-FIT TUBING for covering rolls or bales . . . quick and easy to use . . . has proved it can cut labor costs on many packing operations.

Here's why Bemis is your Burlap G. H. Q.

- Largest importer — You benefit from our large, complete stocks.
- Experience — Producers and users alike accept Bemis' grading of Indian burlap as the standard for the industry. You benefit from our knowledge of quality.
- Facilities — 16 plants and 15 additional sales offices, strategically located, assure a dependable source of supply and prompt service.

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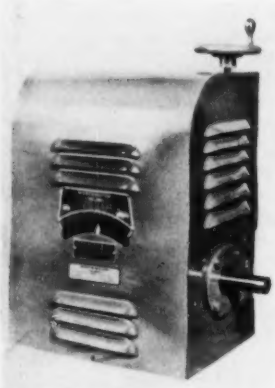
(*Continued from page 158*)



***A NEW STARTER** for squirrel-cage induction motors is available in capacities from ¼ to 100 hp.*

breaker, and slam-proof self-indicating interlocked handle.

With capacities from ½ to 100 hp., and 110- to 600-v. polyphase, the unit is available in NEMA sizes 0 through 4, and NEMA-type enclosures, 1, 1A, 3, 4, 5, 7 and 9.

The new Life-Linestarter component is said to provide fast, trouble-free operation because of the simple action of a see-saw pivoted on a knife-edge bearing with a kick-out spring to insure positive opening.

Delayed tripping of safe overloads, and instantaneous action on short circuits is provided by the quick-make, quick-break thermal-magnetic AB deion circuit breaker.

Designed for use with up to three safety padlocks, the slam-proof self-indicating handle is also interlocked to prevent opening of the enclosure when breaker is closed.

Standardized enclosures, compact design, straight-through wiring, and front-removable parts provide safe, easy installation and maintenance. Sheet-steel enclosures are Bonderized to increase corrosion resistance.

Hand Tachometer Features Low Torque

A new dual-range hand tachometer, Smiths Model A.T.H. 10, featuring extremely low torque, 0.40 oz. in. on lowest range, is available from Equipoise Controls, Inc., 100 Stevens Ave., Mount Vernon, N. Y. Ranges are 0 to 1,000 rpm. and 0 to 5,000 rpm. Each range is printed on the dial in a

In Reprocessing NYLON WASTE

PROCTOR EQUIPMENT

Results in THREAD FREE GARNETTS . . . EVENLY SPUN YARNS . . .

Proctor equipment for reprocessing nylon waste is resulting in fabrics being reduced to the fiber stage in such a way that waste is ideally suited to re-spinning. The reason is simply that the entire Proctor system has been designed to meet the specific needs of the nylon waste plant. The first all nylon waste plant ever built went into operation during the summer—completely Proctor equipped. Results reported by that plant indicate that this Proctor specially designed equipment results in thread free garnetts and makes possible evenly spun yarns.

The whole emphasis of this system is on the gradual reduction of fabric to the fiber stage and is accomplished in such a way that percentage of spinnable fibers recovered from the woven fabric is greater than has ever been possible with any other system of reduction.

Waste material is fed first to a Proctor picker, especially designed for nylon waste, which gives a preliminary opening action. From this picker, it is discharged through a condenser to a coarse shredder, then through a condenser to a fine shredder and through another condenser to three garnetts.

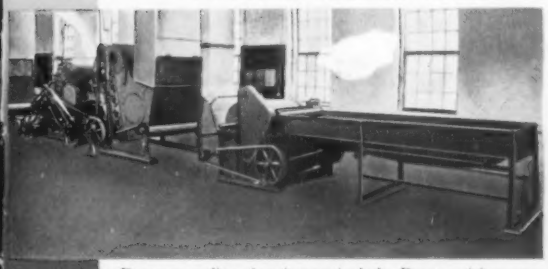
Of course, the system may be varied as to the number of units and their arrangement—but in any installation, the principle of gradual reduction to the fiber stage will be maintained.

For complete information about Proctor equipment for nylon waste reprocessing—or any waste reprocessing need, write today.

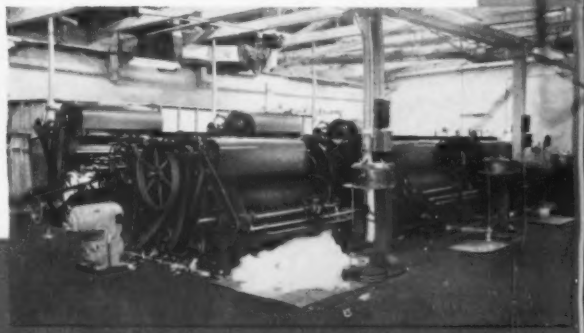
PROCTOR & SCHWARTZ · INC ·
PHILADELPHIA 20 · PA ·

Designers and Manufacturers of

AUTOMATIC BLENDING and STOCK CONVEYING EQUIPMENT · CARDING and GARNETTING MACHINES · DRYERS FOR STOCK · YARN · PIECE GOODS · NYLON SETTING



Preparatory line of equipment includes Proctor picker especially designed for handling nylon, followed by a condenser and coarse shredder, a second condenser and fine shredder.



Final work in reprocessing nylon is done by three garnetts designed to meet the special characteristics of nylon.

1. Eliminates packing and roping of fabrics.

2. Tends to protect fabrics to be dyed from chafe marks, rope marks and other distortions to the weave.

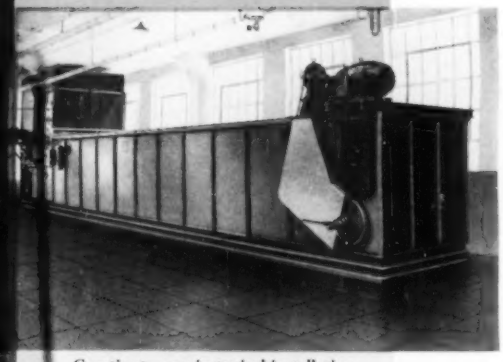
3. Conveyor principle lessens danger of tangling and pulling of fabrics.

4. Bleaching time reduced to less than one hour.

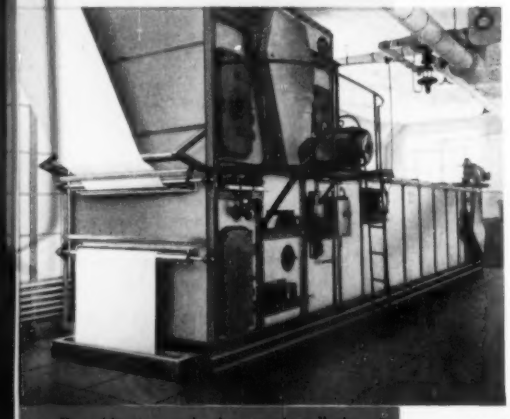
5. Considerable cost saving over less automatic operations.

Check these advantages

OF CONTINUOUS CONVEYOR BLEACHING IN THE PROCTOR-MATHIESON OPEN WIDTH STEAMER



Caustic steamer in typical installation



Peroxide steamer in the same installation

Continuous conveyor bleaching as done in the Proctor-Mathieson system is meeting a long standing need in the textile industry.

Open width bleaching is accomplished in a continuous process by gently conveying the fabric through the caustic and peroxide steaming cycles, thus combining the advantage of continuous bleaching with a minimum amount of cloth pressure through packing, roping of the fabric or distortion to the weave.

The Proctor-Mathieson system is particularly applicable for goods that are to be vat dyed, since the conveyor system lessens the dangers of chafe marks, rope marks and other distortions which could cause defects in dyeing.

Ten commercial installations of this equipment are producing results that prove the advantages of this system in handling a variety of fabrics that are later dyed all shades.

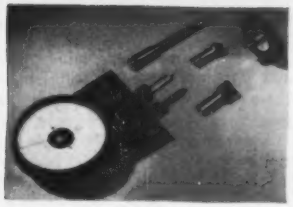
Investigate the possibilities of the Proctor-Mathieson continuous open width steamer in your plant.

PROCTOR & SCHWARTZ · INC

PHILADELPHIA 20 · PA ·

Designers and Manufacturers of

AUTOMATIC BLENDING and STOCK CONVEYING EQUIPMENT • CARDING and GARNETTING MACHINES • DRYERS FOR STOCK • YARN • PIECE GOODS • NYLON SETTING



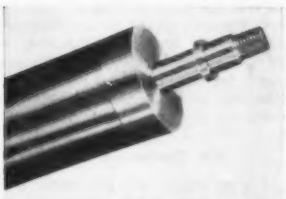
SPEED READINGS over a range from 0 to 5,000 rpm. are guaranteed accurate to 0.5 of 1%.

contrasting color. A revolving Alnico permanent magnet inside of drag cup assures extreme sensitivity and accuracy over the entire scale range. Accuracy of 0.5 of 1% over the entire scale range is guaranteed.

The instrument is provided with a knurled knob for range selection and a pushbutton on either side of instrument for releasing and/or holding pointer at the machine-speed indication. The tachometer comes packed in a velvet-lined Fabricoid carrying case, complete with male and female centers, 3½-in. extension and 6-in. circumference surface measuring disk.

Metal-Core Brush Life Lengthened by Improvements

A BRONZE END RING is now used in Metlkor-nylon-bristled brushes to hold stainless-steel winding strip more firmly.



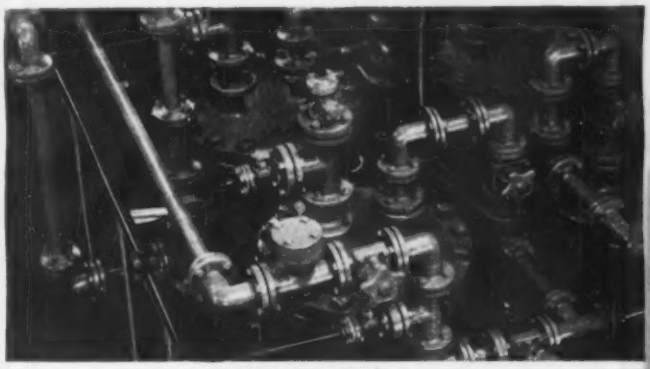
STAINLESS-STEEL END PLUG with a 1-in. stainless-steel shoulder improves the strength, lightness, and corrosion resistance of the metal brush cone.

Improvements in Metlkor brushes to further increase their life span have been made by M. W. Jenkins' Sons, Inc., Cedar Grove, N. J.

A new and improved bronze end

specify SARAN LINED steel pipe

CORROSION PREVENTION IS MORE PROFITABLE THAN EQUIPMENT REPLACEMENT!



WHAT part of industry's six billion dollar corrosion bill are you paying? Any amount is too much and can be cut considerably through the installation of saran lined steel pipe. You will find, as have many of the country's leading manufacturers, that saran lined steel pipe means dependable, long term operation. In addition to the excellent corrosion resistance of this remarkable pipe—you have the plus values of rigidity, pressure strength and ease of installation, requiring NO special tools. These advantages are all important to you in the reduction of shut-down time, lost production and equipment replacement.

Send in the convenient coupon to The Saran Lined Pipe Company, Dept. MTSP-505, for more detailed information on saran lined pipe.

★send today!

Please send me a copy of your catalog on Saran Lined Pipe, Valves and Fittings.

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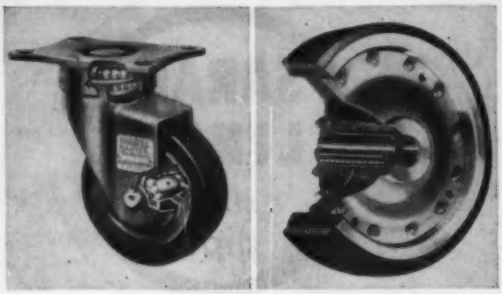

A SAVING AT EVERY TURN

Choose just the right caster or wheel for your needs from the Darnell line of nearly 4000 types. These precision made casters and wheels will help you speed up production . . . will pay for themselves many times over.

SAVE EQUIPMENT
SAVE FLOORS
SAVE MONEY
and TIME

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DARNELL

Casters & Wheels

DARNELL CORP. LTD. 60 WALKER ST. NEW YORK 13, N.Y.
LONG BEACH 4, CALIFORNIA 36 N. CLINTON CHICAGO 6, ILL.

ring secures the copper or stainless-steel winding strip more firmly than the old type.

The substitution of stainless steel and plugs for bronze castings makes these new plugs harder, tougher, and more corrosion-resistant. Stainless steel is lighter than bronze, a factor that mill men appreciate because furnishers are handled several times a day when colors are changed. In addition, a wider shoulder extending well into the winding assures protection from corrosion at the brush ends should loose or slightly displaced rings allow color to penetrate the winding. Gudgeons are also protected against becoming loose when handled carelessly in the mill.

A further development is the embedding of the synthetic-rubber gasket in a rubber-like cement. This feature seals and holds the gasket in place even when furnishers are roughly handled.

Useful Accessories for Textile Mills

▶ To request further information on any item, please use the card in the Reader-Service dept.; refer to the number at the end of the item concerned.

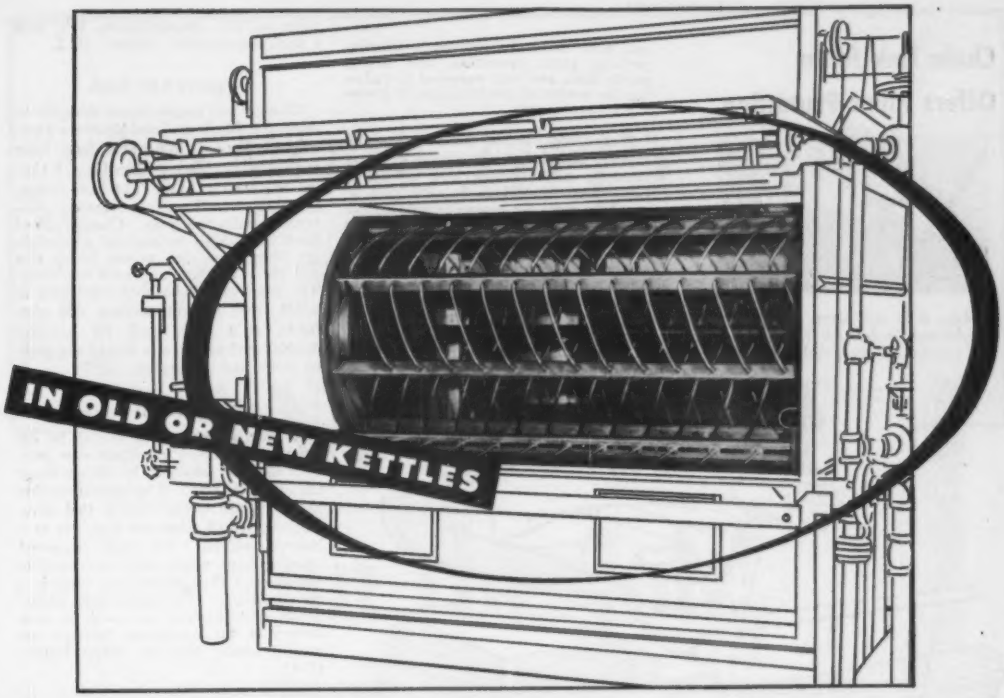
Materials Handling

Barrel and Drum Covers

Barrel and drum covers made of tough, neoprene-impregnated, kraft paper have been introduced by Chase Bag Co., 309 West Jackson Blvd., Chicago 6, Ill. These covers are said to be an efficient and economical means of guarding the contents of drums and barrels against contamination in handling. With the covers made by combining neoprene latex with paper pulp at the paper mill, it is claimed the neoprene adds greatly to the finished wet strength and imparts resistance to sunlight, oils, and chemicals. A stitched-in elastic band around the bottom edge of the cover holds it firmly in place. Each cover can be used several times. (U-1)

Belt Gravimetric Feeder

A new Midget belt gravimetric feeder has been developed by Omega Machine Co., 345 Harris Ave., Providence, R. I. The model 50-8, which feeds dry chemicals continuously by weight, has an 8-in. belt with a 1-ft. high weigh span and a capacity of 3 cu. ft. per min. The feeder is said to feature high accuracy, a feeding range of 100 to 1, a positive non-flooding stainless feeding mechanism, variable-speed transmission, a single ¼-hp. motor, proportional-feed-rate hopper agitation, an automatic alarm device, a one-



for better dyeing *Specify* **New Hunter Herringbone Hump Reel***

The new Hunter Stainless Steel Herringbone Hump Reel offers production advantages and economies for old or new Hunter piece dye kettles as well as for kettles of other manufacture. This revolutionary new design eliminates the chance of streaks and kettle cracks caused by goods running in one fold — it eliminates channeling — it eliminates slip and chafe marks — it eliminates re-dyes! The unique herringbone design effectively opens all types of cloth which makes it ideal for all woolens and worsteds from 7 oz. knit goods to 32 oz. Meltons.

*PATENT PENDING

Call in a HUNTER Field Engineer...

D. L. Raedel, 1936 West Lake Street, Chicago, Ill.
S. Alex Dalghren, Ivyland, Bucks County, Pa.
J. Everett Burdick, Grayson Lane, Newton Lower Falls, Mass.
E. G. Paules, 1762 West Vernon Avenue, Los Angeles, Calif.
Rudel Machinery Company, Ltd., Canada
Carl Endlein, 1734 Candler Building, Atlanta 3, Georgia

Hunter

JAMES HUNTER MACHINE CO., NORTH ADAMS, MASS. FOUNDED 1847.

(Advertisement)

Chain Link Fence Offers Plant Protection

Many mills and plants are finding that Continental Chain Link Fence is the perfect solution to the problem of prowlers and petty thefts. In addition to offering positive plant protection, this strong, sturdy fence also cuts overhead by reducing the number of watchmen and by lowering insurance rates.

Made from Konik Metal containing copper, nickel and chromium for extra strength, rust-resistance and durability, Continental Chain Link Fence is built to stand the gaff! No expensive maintenance is necessary. It is available in many different styles and a wide range of heights. Correct erection is assured by Atlantic Steel Company's own carefully trained crews.

Estimates are gladly furnished without cost or obligation. Simply write to Atlantic Steel Company, 16th and Holley Streets, Atlanta, Georgia.

We're doing our dead level best!

Running a steel warehouse is tough enough in normal times. But today it is really tough.

We're on the phone, burning up the telegraph lines, or running the special delivery boys ragged, day in and day out, trying to get materials for you. And we are handling orders just as rapidly as we can.

We're doing our dead level best to meet the needs of our customers, and we'll never stop trying.

One thing we are asking of our customers is that they order only what they actually need. Stockpiling is out. Government orders restrict inventories to normal requirements.

By full cooperation on everybody's part, all of us will fare better.

WAREHOUSE DIVISION
Atlantic Steel Company
ATLANTA, GEORGIA • EMERSON 3451

piece molded sprocket-driven belt, and a small stainless-steel cabinet. (U-2)

Improved Lift Truck

Changes and improvements designed to make the Marforge Load-Mobile a more efficient piece of equipment have been announced by Market Forge Co., 25 Garvey St., Everett, Mass. The basic design, including the three-way operating positions, remains the same. Changes afford easier accessibility to electrical and auxiliary equipment, such as the lifting ram and the hydraulic pump used for lifting. The improved Load-Mobile is available as a lift truck for conventional skid platforms, as a pallet truck for handling double-faced pallets, as a freight and pick-up truck, and as a tractor. (U-3)

Pallet Load-Lift Truck

A pallet load-lift truck said to be designed and built on a radically new principle has been developed by Market Forge Co., Everett, Mass. This aluminum-alloy truck features special wheels that automatically retract when the forks are in a lowered position. The truck, supported on two front wheels and two auxiliary wheels on a short wheel base, turns in a very small area. The flying-handle danger is claimed to be done away with by elimination of the connection between the pulling handle and the lifting handle. (U-4)

Pivoted Fork Tines

Vertically pivoted forks for use on high-lift industrial trucks have been developed by Elwell-Parker Electric Co., Cleveland, Ohio. The device is furnished for use in factories, warehouses, and shipping departments where loads must be moved in congested areas. The tines are used either in the ordinary way or may be quickly adjusted for unusual conditions relating to size or position of the load. Each tine of the fork can be swung inward from its normal straight-forward position, facilitating use with either pallet or skid. (U-5)

Portable Winch-Hoist

A new 1½-ton alloy winch-hoist has been announced by The Lug All Co., 331 East Lancaster Ave., Wynnewood, Pa. The Lug All hoist has a 30-to-1 power ratio and is said to be fully tested to a 100% overload. The hoist, only 8½ lb. in weight, can be operated in any position and may be set forward, reverse, or free-wheeling. There is no brake to slip. Locking is positive and automatic. Ten feet of cable wind out of the way onto the drum. There are no ropes to tangle or chains to kink. Extensions of any length are available. (U-6)

Slewing Crane Arm

Designed for easy positioning into freight cars of loads up to 800 lb. at 80-in. load centers, a slewing crane arm has been developed by Towmotor Corp., 1226 E. 152nd St., Cleveland 10, Ohio. The arm is pivoted in such a way that a two-

NO MORE *TIPPY* WOOL

with

ANTHOMINE*

on the job!

IN ALL WOOL DYEING OPERATIONS *ANTHOMINE* INCREASES THE AFFINITY OF WOOL FIBRES FOR DYESTUFFS.

THIS RESULTS IN LEVEL SHADES WHEN DYEING STOCK, YARN OR PIECE GOODS.

TIPPY AND BLENDED WOOLS ARE DYED A SOLID SHADE BY ADDING *ANTHOMINE* TO THE DYE BATH.

Mills throughout the country use* ANTHOMINE *for:

- **Even dyeing**
- **Brighter, fuller shades**
- **Quicker, better exhaustion of dyebath**
- **Softer, more pleasing "hand"**
- **Reduced processing time**

Send for Technical Service Bulletin #203-100.2 for complete information, including how to use ANTHOMINE for Top and Yarn Dyeing, Pressure or Package Dyeing, Leveling Unevenly Dyed Yarn or Shady Pieces, Dyeing Metallized Colors, etc.

Arkansas Co. INC.

Manufacturers of Industrial Chemicals for Over 40 Years

NEWARK, NEW JERSEY

*Reg. U.S. Pat. Off.

NEARLY A MILLION *Spindles* EQUIPPED WITH REGNERY ADAPTERS

Because Your present spindles can be easily converted for sleeve type spinning.

Because The tried and proven conventional type of standard base, bolster and spindle with a wonderful record in many mills of 20 years or more of low cost operation and maintenance has a larger package and improved spinning with the Regnery Adapter.

Because Conventional spindles with Regnery Adapters balance out any other paper tube spinning in the mill.

Because A standard spinning bobbin can be used throughout the mill when filling spindles are converted with Regnery Adapters for use on a rewind operation.

THESE ARE THE ESTABLISHED FACTS!

1. More yarn per bobbin.
2. A smoother spinning unit.
3. Less ends down with better quality work.
4. Less waste in spooling operations.
5. A more uniform traverse.
6. A trouble-free, permanently "locked in" spindle and adapter.
7. A saving in doffing and spooling costs.
8. Lower bolster replacement costs.

LOWER YOUR PRODUCTION COSTS with REGNERY *ALUMINUM SPINDLE ADAPTERS*

Modern TOP drive adapters for the tapered or parallel bobbins can be installed in your mill quickly and easily to your specifications.

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way hydraulic cylinder can swing it laterally 20° to either side of center. The arm is readily detachable to permit the truck to be used with standard pallet forks. The unit can handle 500-lb. loads slung from the hook on the crane arm, without difficulty. (U-7)

Machine Shop

Ball-Bearing Tube Expander

A new ball-bearing thrust-collar tube expander has been announced by Crane Packing Co., 1800 Cuyler Ave., Chicago 13, Ill. Marketed under the trade name of John Crane Control, the unit is designed as a precision instrument for heavy-duty service. The device has only two electrical working parts, shockproof mounted and enclosed in a rugged aluminum cabinet. The advantages of this control over other tube-rolling methods are said to be: only two electrical working parts, no electronic tubes, light weight, absence of a voltage regulator, automatic alignment, and elimination of maintenance. (U-8)

Hand-Cleaning Cream

A new cream hand cleaner that is used without water has been announced by Kalene Corp., Minneapolis, Minn. It is furnished with a specially designed dispenser that can be installed in any suitable location in the shop, office, or store house. Kalene is a smooth cream that removes grease, tar, paint, or ink without harsh solvents or grits that irritate the skin. As the cream is rubbed into the hands, the dirt, grime, and stains are floated off and may be removed with a paper towel, cloth towel, or rag. (U-9)

Internal-Groove Dial Gage

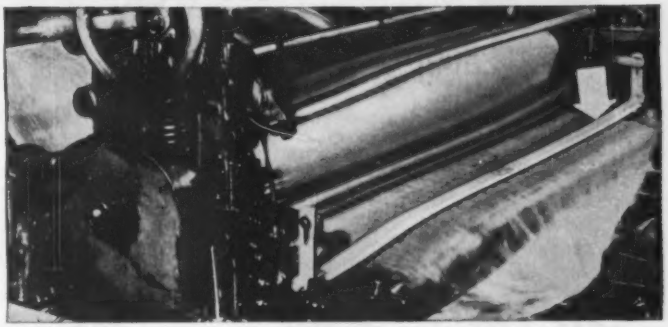
A groove gage designed to provide positive control in checking diameters of internal grooves has been developed by Nilsson Gage Co., P. O. Box 505, Poughkeepsie, N. Y. The gage is for use in checking diameters of internal grooves and recesses on retaining rings, O-rings, oil grooves, ball races, washer grooves, etc. It is said that its unique design and patented features permit the Nilco dial groove gage to be used efficiently by both skilled and unskilled personnel in maintaining quality control and effective inspection throughout production processes in any plant. (U-10)

New Automatic Drill Head

A new automatic drill head known as "Dumore" has been announced by The Dumore Co., Racine, Wis. The new drill head combines a motor with a double-end armature shaft and a chuck on one end, and a rotary vane compressor on the other end. The entire assembly operates as a unit. A motor supplies the power for drilling, while a self-contained air compressor advances the drill at pre-determined speed and pressure. The unit operates from any convenient electrical out-

THIS SIMPLE BAR...

...may stop your STATIC TROUBLE



Its appearance is misleading. It looks too simple to be effective. But the Ionotron Static Eliminator® *has eliminated static troubles,* in hundreds of installations, on a wide variety of textile equipment, including tape condensers of wool cards, gear boxes of drawing frame delivery units, Peralta machines, ironers, hosiery boarding machines, finishing machines, and elastic thread processing equipment.

How Ionotrons Work

Ionotrons continuously emit alpha rays, which remove static charges by ionizing the air in the static zone. Sealed in a metallic bar is a strip of foil that contains a highly diluted and carefully controlled amount of radium—the only long-lived emitter of alpha rays that is commercially available. The action is continuous for the life of the textile equipment. No electric power is needed, and there's no operating cost.

How safe are Ionotrons?

Like an electric circuit or a fast-moving shuttle, an Ionotron *could* be so misapplied that a potential hazard would result. Properly installed, however, there is no danger to personnel, property, or equipment. Accurate test instruments are at hand to prove that the installations are well within the conservative safety limits established by health authorities and other experts in this field. On all Ionotron installations, an adequate factor of safety protects even those operators who may depart from normal positions and procedures on the job. We will not recommend or furnish Ionotrons for installations where equipment construction will not permit effective shielding or if operating procedures will not permit compliance with instructions.

How much do Ionotrons cost?

Considering the increased production you get by eliminating static troubles, and the improved working conditions employees enjoy due to reduced humidity, Ionotron installations are economically feasible for many types of mill equipment. Prices of Ionotrons installed on Peraltas range from $200 to $240. On a tape condenser of a wool card, a complete static-elimination installation may involve as many as four bars and cost some $900. But—the Ionotron's first cost is its *only* cost. *Once in place, the only maintenance required is an occasional wipe with a soft cloth.*

Send for Free Bulletin

Along with factual information on the Ionotron, U. S. Radium has a simple questionnaire form ready to send you. Filled out and returned to us, it very likely will permit us to tell if your static problem can be solved in this way, and whether the Ionotron can pay its way in a successful installation in your mill. Just fill in and mail the coupon below.

IONOTRON Static ELIMINATOR

Mail Coupon for Descriptive Bulletin

*Dept. 913, U. S. Radium Corp., 535 Pearl Street, New York 7, N. Y.

Please send illustrated bulletin describing uses of the Ionotron Static Eliminator in textile operations.

Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____

*Inquiries from Canada and British Commonwealth should be addressed to Eldorado Mining & Refining (1944), Ltd., Ottawa, Ontario, Canada

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ALL-METAL THERMOMETER

Up in the air, down in a pit, across the shop . . . you can really read the big, open dial of a Weston Thermometer. And because these rugged, all-metal instruments stand exposure, abuse—you know the temperature you read is *right*.

Despite the angle of tank side or pipe, there's a Weston Thermometer to fit it. You can get models with stems that are long or short, that project straight from the back or out the side at any 15° position around the periphery of the thermometer head—whatever you need for *your* application.

Various industrial, *Max-Min, and contact-making types are standard. Consult your Weston representative, or write Weston Electrical Instrument Corporation, 637 Frelinghuysen Avenue, Newark 5, New Jersey . . . makers of Weston and Tagliabue instruments.

*Registered trademark.

WESTON *Instruments*

let, and its use is said to account for larger savings in drills and scrap. (U-11)

New Cabinet Bench

An improved cabinet bench, part of their Hallowell shop-equipment line, has been announced by Standard Pressed Steel Co., Jenkintown, Pa. The bench is designed for men accustomed to the finest tools and equipment. It is said to have more "custom" features than other stock benches. The bench is of all-steel construction, with choice of top materials, and has ample storage space with standardized units, interchangeable accessories, and a neat appearance. (U-12)

Water Demineralizer

A new ion-exchange demineralizer has been announced by the Penfield Mfg. Co., Inc., 19 High School Ave., Meriden, Conn. The demineralizer has a permanent cartridge and is designed for attachment to any wall, near a tap, for laboratories and other users of up to 10 gal. per hr. of high-purity demineralized water. A flow meter acts as a sight indicator to enable the operator to adjust flow intake to the proper rate for most efficient results. No heat or steam power is required. Pure demineralized water can thus be obtained easily at a fraction of the cost of distilled water, the manufacturer states. (U-13)

Engineering

Manual Starter

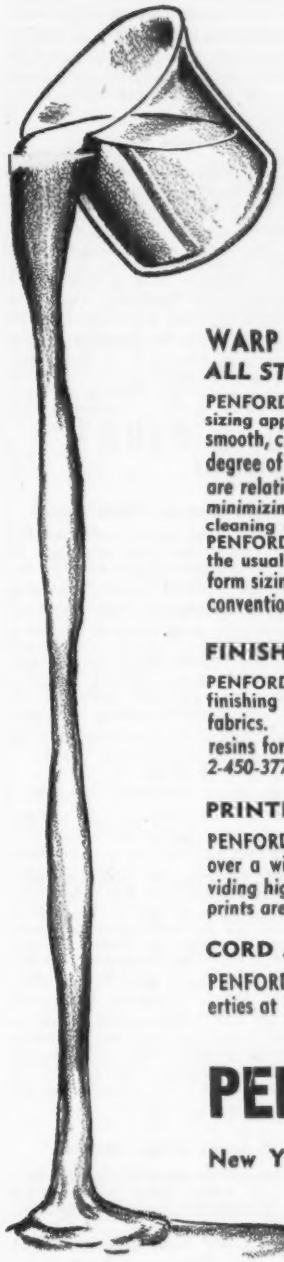
An improved manual starter has been announced by Westinghouse Electric Corp., 306 Fourth Ave., Pittsburgh 30, Pa. The Motor Sentinel, class 10-023, is equipped with an indicating light to show when the motor is running. The starter is useful for starting and protecting small ac. and dc. motors used with fans, pumps, compressors, and other industrial equipment. It is available as a double-pole switch with ratings up to 1 hp., 250 v., ac. or dc. The device is housed in a NEMA type-I enclosure, suitable for general-purpose installation. (U-14)

Multiple-Feed Oiler

A centralized system of lubricating 1 to 20 bearing points at a time has been announced by Trico Fuse Mfg. Co., North Fifth at West Chambers, Milwaukee 12, Wis. Oilers are mounted above the highest point to be lubricated, and heavy or light oils are fed by gravity from a large reservoir through individually adjustable needle valves and copper or Neoprene tubing to the various bearings. Starting and stopping of flow of oil are controlled from one central point by manual or automatic solenoid control. (U-15)

Pre-Shaped Steel

Steel bar stock, cold-drawn in special sections to fit specific uses, has been announced by A. Milne & Co., 745 Washington St., New York 14. The new development is expected to minimize ma-



Announcing the NEW PENFORD GUMS*

An entirely new series of patented products from Corn for application in the Textile Industry for:—

WARP SIZING COTTON, WOOL AND *ALL STAPLE FIBERS AND BLENDS*

PENFORD GUMS are manufactured in the viscosity ranges required for all warp sizing applications. PENFORD GUMS have improved filming characteristics and form smooth, clear, flexible, continuous films. PENFORD GUMS exhibit an unusually high degree of adhesion to both the natural and synthetic staple fibers. PENFORD GUMS are relatively non-gelling and can be easily handled over a wide temperature range, minimizing hard size and roll and start up marks. PENFORD GUMS simplify the cleaning of size boxes—eliminates scrubbing and scraping; just flush with water. PENFORD GUMS cook out easily to provide stable size box viscosities, eliminating the usual viscosity breakdown during the size box use period, thereby insuring uniform sizing. PENFORD GUMS are more easily removed in the desizing process than conventional materials.

FINISHING

PENFORD GUMS are manufactured in a wide range of viscosities suitable for textile finishing and because of their film clarity are especially recommended for colored fabrics. PENFORD GUMS are recommended for use in combination with synthetic resins for special finishes, especially in the reacted process described in Patent No. 2-450-377.

PRINTING

PENFORD GUM Pastes are characterized by stability of body and flow properties over a wide pH range. Printing Pastes can be made with PENFORD GUMS providing high viscosities with low Gum solids content, enabling high color yields. Sharp prints are produced and only a minimum of scouring is required for removal.

CORD AND TWINE POLISHING

PENFORD GUMS are manufactured to provide the long string and non-gelling properties at low temperatures so desirable for the polishing of cords and twine.

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* A patented development of our Research Laboratories, the Penford Gums are hydroxy-alkyl ether derivatives, made from corn starch, and produced in the original granule form.

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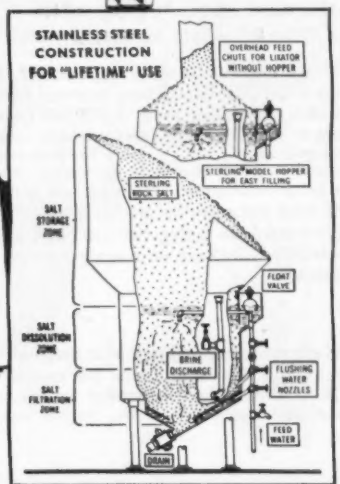

• Why trust to "rule-of-thumb" measuring? Why go through the laborious shoveling, hauling, and hand stirring of salt and water? With International's Lixate Process for Making Brine you are assured accurate salt measurement every time. Stops waste through spilling. Saves time and labor.

• The Lixator *automatically* produces 100% saturated, free-flowing, crystal-clear brine which may be piped to as many points in your plant as you wish — any distance away — by gravity or pump. YOU SIMPLY TURN A VALVE to get self-filtered LIXATE Brine that meets the most exacting chemical and bacterial standards.

Savings up to 20% and often more in the cost and handling of salt have been reported by many Lixate users. Why not investigate?

HOW LIXATOR WORKS

In the dissolution zone—flowing through a bed of Sterling Rock Salt which is continuously replenished by gravity feed, water dissolves salt to form 100% saturated brine. **In the filtration zone**—through use of the **self-filtration** principle **originated by International**, the saturated brine is thoroughly filtered through a bed of undissolved rock salt. The rock salt itself filters the brine. Nothing else is needed.

WHAT THE LIXATOR PROVIDES

- ✓ **Chemical and bacterial purity to meet the most exacting standards for brine.**
- ✓ **Unvarying salt content of 2.65 pounds per gallon of brine.**
- ✓ **Crystal-clear brine.**
- ✓ **Continuous supply of brine.**
- ✓ **Automatic salt and water feed to Lixator.**
- ✓ **Inexpensive, rapid distribution of brine to points of use by pump and piping.**

An INTERNATIONAL Exclusive

The LIXATE* *Process*
FOR MAKING BRINE

INTERNATIONAL SALT COMPANY, INC., Scranton, Pa.

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chining operations in the quantity-production of steel parts. The pre-shaped steels are available in a wide variety of sections, including various standard SAE and AISI carbon steels, case-hardening steel, standard mild steels, and free-cutting steels. (U-16)

Vibration Isolator

A new series of air-dampened "barry mounts" has been announced by The Barry Corp., 179 Sidney St., Cambridge, Mass. Series 6475 is designed for use with light-weight airborne equipment installed in restricted space, to provide effective vibration isolation with all the advantages of air dampening. Equipment supported on these mountings is raised only ½ in. above the mounting surface. Unit mounts are only 1 in. in diameter and have an over-all height of 1 in. under minimum rated load. Load ratings range from 0.3 to 3.0 lb. per mount. (U-17)

Maintenance

Corrosion-Resistant White Enamel

A new product known as Prufcoat BX white enamel has been developed by Prufcoat Laboratories, Inc., 63 Main St., Cambridge, Mass. This white enamel may be applied to masonry, metal, and wood surfaces, even when damp, to provide a protective coating that is said to stay white under most difficult corrosive conditions. It is recommended by the manufacturers for use on both inside and outside surfaces where chemical corrosion, strong caustic cleaning solutions, or moisture create painting problems. (U-18)

Impregnated Lubrication Processes

Processes that produce a solid impregnation of "dry" lubricant into metals, plastics, rubber, and ceramics so as to reduce friction and wear have been announced by Metal Finishing Div., Pyrene Mfg. Co., 10 Empire St., Newark 5, N. J. It is claimed that the highly desirable characteristics of graphite are retained, throughout wide ranges in temperature, in a permanent film that is unaffected by exposure to solvents or weather. These processes are said to have already proved, in regular production, their value for reducing wear in internal-combustion engines and elsewhere. They are also good for use in disk clutches, brakes, gears, worms, and splines. (U-19)

Protective Surface Coatings

A satin-finish protective coating in a new line of DEL Series D coatings has been announced by David E. Long Corp., 220 East 42nd St., New York 17. The coating is said to be easily applied to wood, metal, and masonry. It can be formulated on order, to any color, and to any degree of luster, from flat finish to high gloss, and is designed for use on all areas where color, as well as a corrosion-resistant, washable finish, is required. Colors are available from stock in pastel shades and in white, black, and clear. (U-20)

There's more to this trademark than "REG. U. S. PAT. OFF."

Brand names exist and are protected by the U. S. Patent Office. They identify a standard of quality—to manufacturers, to retail buyers, and to consumers. But the Celanese brand in textile yarns and fibers means more than a standard of quality. For ACETATE rayon, in which Celanese pioneered, has unique and different basic characteristics . . . so valuable to Fabric Mills—Manufacturers—Retailers and Consumers alike that we review them here for the record.

Acetate Rayon...*the Beauty Fiber*

- has touch comfort in every season—always feels good next to the skin.
- has a luxurious hand, is softer, less wiry, than other chemical yarns. It drapes better.
- takes naturally to washing, it dries much faster than other rayons or natural fibers.
- is spun white without bleaching—will not yellow or gray with use.
- takes different dyes than natural fibers or other rayons, providing an unequalled richness of color.
- is thermoplastic. This means that fabrics of acetate yarn can take pleating and moire markings that survive laundering or wet cleaning.
- resists hard wrinkles without the use of resin finishes.
- has an exceptionally low rate of shrinkage—unlike other rayons or natural fibers, stable construction may be obtained without special finishes.
- is a chemical compound not found in nature—and it is highly resistant to damage by mold or mildew. Moths will not attack it.

Acetate rayon is the important chemical textile fiber. It was developed and pioneered by Celanese Corporation of America. The Celanese Brand, used alone or in combination with other famous names, has a powerful Point-of-Sale value. Put it to work for you.

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A continuing, long-range program of plant modernization and improvement is one of the ways we keep our capacity equal to the increasing demand for UNBRAKO Socket Screw Products.
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Fully-Formed Pressure Plug
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Books of Interest

Timestudy-Methods Improvements Given

HOW TO CHART TIMESTUDY DATA, by Phil Carroll; McGraw-Hill Book Co., 330 West 42nd St., New York 18; cloth, 323 pages, $5.

Improving the timestudy methods in one's mill is something in which every mill operator should be interested. The presentation of the data obtained from spending many hours out on the floor is in this book based primarily on graphs and other visual charts. With the aid of step-by-step descriptions and illustrations of the making of charts, almost anyone can plot his timestudy findings into a form useful for both comparison and policy decisions. Emphasis is, in short, placed on trying to reduce the cost that goes into the setting up of individual standards, and to increase the productivity of one's timestudy dollar.

Neglected Phase Of Wool Processing

SHODDY AND MUNGO MANUFACTURE, by N. C. Gee; Emmott & Co. Ltd., 31 King St. West, Manchester 3, England; cloth, 166 pages, 21 shillings.

In what is believed to be the first illustrated technical book on the materials, machines, and operations involved in respinning material that has been recovered from articles made of wool—the author, head of the textile department at Dewsbury Technical College, Yorkshire, England, has done a service for the extensive rag, shoddy, and mungo trade, both at home and abroad. Twenty-two chapters and 132 illustrations of equipment make this work a basic text for anyone in or connected with this aspect of wool manufacturing.

Color-Measurement Advances Described

COLORIMETRY, NBS Circular 478, by Dean B. Judd; Superintendent of Documents, U. S. Govt. Printing Office, Washington 25, D. C.; paper, 56 pages, 30¢.

For 20 years the National Bureau of Standards has been working on the establishment of practical working standards of color and on setting up and administering color tolerances. This illustrated booklet on such color measurement describes the

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96 Reiner Tricot Machines plus Warpers and Creels are the core of this important mill's million dollar expansion program.

Long users of Reiner warp knit equipment, the management of Bangor Mills, Inc. based their decision exclusively on past performance of Reiner machines—Tricot Machines, Warpers or Creels. They, if anyone, know how reliable, economical, and versatile Reiner equipment is, and how profitably it serves the ever-expanding tricot market.

To those interested in Tricot fabric production—the fabric with a big future—we extend a cordial invitation to see Reiner Machines in mill action. Write for an appointment or richly illustrated catalogs.

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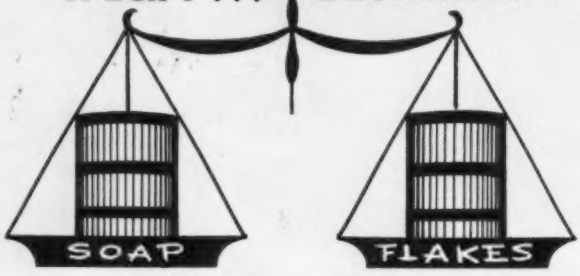

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A real saver! Use either Drummond SOAP or FLAKES and end, once and for all, your scouring and finishing problems! Drummond leaves fabrics spotlessly clean . . . soft . . . more colorful!

Today, when you are watching costs more than ever, they fit into the "saving" column in a way that spells DOLLARS and PROFITS . . . and you will be more than pleased with how much either save you. High body and low alkali content is the secret, and that is DRUMMOND.

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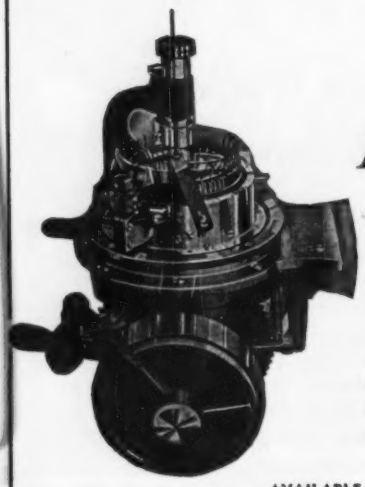
CAMDEN N. J

James A. Greer, Southern Manager
P. O. Box 306, Greenville, S. C



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standards and measurement methods developed so far, and gives the basis for each technique. Topics covered include the standards observer, illuminants, the coordinate system, small-difference colorimetry, material standards of color, one-dimensional color scales, and general methods and specifications.

Textile dyers will want this book for reference purposes and as basic literature.

Wool-Processing Book from Britain

WOOLEN AND WORSTED YARN MANUFACTURE, by J. W. Radcliffe; Emmott & Co. Ltd., 31 King St. West, Manchester 3, England; cloth, 415 pages, 21 shillings.

The author of this British treatise on basic woolen and worsted yarn-manufacturing techniques has been for more than 25 years an examiner on the subject at the City & Guilds of London Institute. Chapters include British and Continental methods from the first selection and sorting of raw material. It goes through scouring, blending, and processing and into fancy yarns, twisting, and reeling of skeins. Equipment discussed and illustrated includes the Harrow and swing-rake types for scouring; the "Aireflow" drying machine; the Oddie-Radcliffe system of blending; the Dronsfield card-grinder; the Peralta machine; and the Noble, Lister, and Heilman combs. Included also are comparisons of the English and French drawing systems and of the flyer, cap, ring, and mule systems of spinning.

It may be handy for American mill men to know where operating details about this overseas woolen and worsted yarn equipment can be found. This book presents the basic facts.

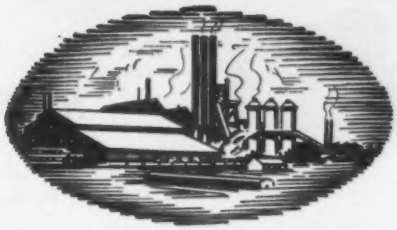
Other Booklets Of Interest

PAPERS OF THE SECOND CANADIAN TEXTILE SEMINAR, at Queen's University, Kingston, Ont.; Textile Technical Federation of Canada, Box 1000, Cornwall, Ontario, Canada; paper, 201 pages, $5 (Canadian).

Technicians in the industry who missed the Second Canadian Textile Seminar at Kingston, Ont., can now obtain the complete text of the more than 40 papers delivered by Canadian, British, and American experts in their fields. Subjects cover all phases of primary textile manufacturing.

TEXTILE TREATING COMPOSITIONS, by Patent Publications, Box 4094, Washington 15, D. C.; paper, 17 pages, $4.

Over 150 extracts of textile-treating composition patents are included in this booklet. All descriptions are from the U. S. Patent Gazette, and include those containing sulphoxy compounds, organic amines or amides, and the ether groups. Research chemists will be able to determine from the main patent claim whether or not the entire patent is needed by their organization.



1900 ★ THE MIRACLE OF AMERICA ★ 1950

Freedom and Progress

It's no stretch of the imagination, rather, robust realism to call our past half century a Miracle—U.S.A.

America has set an amazing record of progress in 50 years—but a moment in the history of civilization. A record unequalled by any other political or economic system.

Merely by broad brush strokes, we can all visualize this miracle. Remember the crystal set, the hand-cranked car, the biplane? A far cry from our FM radio, television, hydro-matic drive and supersonic planes.

And here's another phase of the miracle that went hand-in-hand with these and the myriad of intertwined technological advances—ranging from the radio telephone and Bakelite to the X-ray tube and teletype . . . and to atomic energy and its untold potentialities.

- Since 1900 we have increased our supply of machine power 4½ times.
- Since 1900 we have more than doubled the output each of us produces for every hour we work.
- Since 1900 we have increased our annual income from less than $2400 per household to about $4000 (in dollars of the same purchasing power), yet . . .
- Since 1900 we have cut 18 hours from our average work week—equivalent to two present average workdays.

How did we do it? The basic cause for this composite miracle has been the release of human energy through FREEDOM, COMPETITION and OPPORTUNITY. And one of the most important results is the fact that more people are able to enjoy the products of this free energy than in any other system the world has ever known.

THIS IS THE MIRACLE OF AMERICA . . . it's only beginning to unfold.

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Not the dishonest way, of course. Actually, it *makes* money because it *saves* you money. Saves you time and trouble, too.

This device is called the TICKOPRES. With it, you can imprint cone stickers—as few or as many as you need, when you need them—*right in your own mill!* Avoid expensive inventories and costly printers' bills. The TICKOPRES is so easy to operate that any employee can turn out legible, attractively-printed cone stickers. Type can be changed in seconds, and Markem inks dry so quickly that stickers are ready for immediate use.

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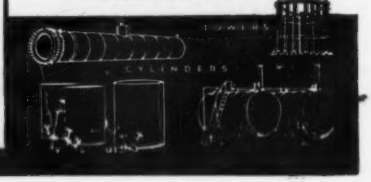
NEWNAN, GA.



MILL MAINTENANCE

Life of Clutch Can Be Increased

Proper selection, installation, and care of clutches will save expensive breakdowns. When a clutch that drives a line shaft in a mill knocks out and must be repaired, a great deal of production is lost. The indirect cost of a knock-out can be many times greater than the direct cost of the clutch damage.

In selecting and installing a line-shaft clutch, particularly where heavy starting loads are necessary, it is advisable to consult with the clutch manufacturer. It is essential that the proper type and size of clutch be selected for the job and also that it be correctly installed.

Some of the points that should be closely checked when the clutch is installed are:

1. See that the clutch fits the shaft.
2. See that enough room to operate the throw-out mechanism is left.
3. The clutch should be aligned with the driving unit and with the driven unit. If the clutch is out of line, the gear teeth on the clutch driving plate or the spline in the hub of the plate will wear.
4. The throw-out collar must not be subjected to thrust. If so, the clutch is apt to be thrown out at any time.
5. Before the clutch is put into operation, the throw-out bearings and the shaft bearings should be checked for lubricant. After the lubricant is added, check for leaks.
6. Test the operation of the clutch several times before it is put in service. It should be checked several times every day for the first several days of operation.

Proper maintenance is, next to installation, the most important factor in clutch life.

Here are a few pointers on maintenance:

a. Inspect and adjust the clutch often.

b. See that the clutch is properly lubricated.

c. Keep clutches clean.

d. See that the shifter mechanism does not bind. Heating and wear will result if it does bind.

e. Check alignment frequently.

f. Dismantle the clutch occasionally and clean and inspect the parts.

CALCO dyelines

No. 18 of a series

PUBLISHED BY AMERICAN CYANAMID COMPANY CALCO CHEMICAL DIVISION
DYESTUFF DEPARTMENT, Bound Brook, New Jersey

Calco

Specialty Uses of Screen Printing

While the process of screen printing is usually a hand operation, and hence is slower and more expensive than roller printing, it does lend itself to a large number of specialty uses. It is well adapted to printing materials of

all kinds, such as cotton, silk, viscose rayon, wool, acetate rayon and other specialty fabrics.

Some of the instances where screen printing is used are:

a. Short yardage runs

b. Patterns with a long repeat design

c. Unusually wide fabrics

d. Materials that pull out of shape easily

Beautiful fast color patterns can be produced on cotton and viscose by the use of Calconyl Powders or Solutions and Calco Soluble Vat Dyes. These dyes work well together in the same patterns to print luncheon and table cloths, napkins, scarfs, beach towels, ornamental scarves, dress goods, handkerchiefs, and a variety of other gay prints. Calco Soluble Vat Dyes and Calconyls, when used for such screen print applications, produce prints of good wash fastness and fair to good fastness to light. Full bright reds, yellows, and navy blues are usually produced with Calconyls: and bright blues, light shades, and other colors with Soluble Vats. If desired, Calcotex colors (resin bonded pigments) may be used in the same patterns to provide additional shades or effects.

How to Minimize Off-Shade Dyelots

Off-shade dyelots are kept to a minimum by:

1. Selecting dyes which possess good stability to atmospheric, drying and finishing conditions.
2. Rigid supervision and standardization of all dyehouse processes. Too many additions to a starting formula and too much manipulation of procedures are frequent causes of off-shade dyeings. Leaky equipment and dirty equipment are obvious causes of off-shade dyeings.
3. Careful sampling, drying and conditioning of hand samples.
4. Adequate records of all changes in shade which customarily occur between the passing of the hand sample in the dyehouse and the final inspection of the shade in the shipping room.
5. Clean working standards for shade, frequently checked against carefully protected master standards.
6. Illumination for color matching which is adequate in intensity, correct in spectral distribution. This should be kept scrupulously clean and should be frequently checked.

Calco Technical Field Service men are available on request to discuss the theory and the best mill practice to assure efficient dyehouse operation.

Calcocid Phloxine 2G

Bright, economical, light fast shades are desirable attributes for dyes to be used on sweater yarns and carpet yarns. Calcocid* Phloxine 2G has all of these properties in addition to good leveling qualities. It retains its clear brightness of tone in all depths of shade from a pink to a full red.

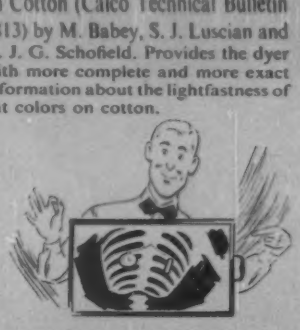
It can be used with Calcocid Fast Red BL Conc. for the red element of combination shades along with Calcocid Blue SAPG and Calcocid Yellow MCG for fading-on-tone properties. It also works well in combinations with Calcocid Fuchsine 6B to produce rich, economical maroons, with good light fastness.

*Trade-mark

For the Textile Bookshelf

Optical Bleaches in Household Soaps and Detergents (Calco Technical Bulletin #811) by E. I. Stearns, T. F. Cooke and H. E. Millson. Paper reprinted primarily for distribution to the soap industry, discusses fully the new whitening agents used in soaps and detergents, particularly those which are applicable to cotton.

Lightfastness Ratings of Vat Dyes on Cotton (Calco Technical Bulletin #813) by M. Babey, S. J. Luscian and R. J. G. Schofield. Provides the dyer with more complete and more exact information about the lightfastness of vat colors on cotton.



In 1949, 3382 X-rays and 1690 influenza virus vaccine injections were administered at Calco's Bound Brook plant.

TEXTILE BANKING COMPANY

Inc.

Factoring Service

Puts your sales on a cash basis
Strengthens your cash position
Relieves you of credit losses

55 MADISON AVENUE • NEW YORK

Items of Interest

* * *

Testing Methods Vary From Mill to Mill

In any discussion of testing, a definite starting point must be established. However, for any given mill, this starting point may be completely different from that of its neighbor. No fixed rule can be given as to where to start testing and where to stop. The problem must be appraised in an orderly and intelligent manner.

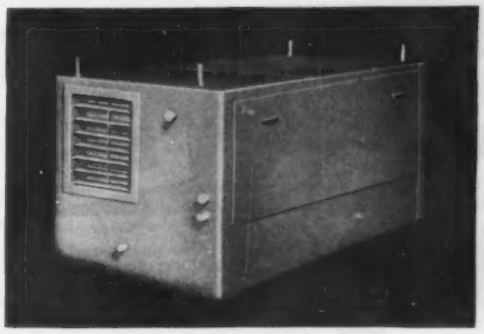
The first and by far most important consideration is the primary need of the organization which desires to use testing information profitably. Each type of mill has its own peculiar characteristics; that is, mills making fabrics for mechanical applications must stress strength and uniformity of strength. Mills on wide-woven goods may be primarily interested in the amount of bow in their fabrics as it affects appearance. Mills on fine combed yarns and goods may be most interested in nep and trash counts in both yarns and fabrics, and mills on sheer fabrics may be fundamentally concerned with yarn evenness.

The question as to what factors are critical in any given organization must be settled in advance between the person in charge of testing; the superintendent directly responsible; a representative of executive management responsible for production and/or quality; and, if possible, someone from the sales force conversant with customer requirements.

The next question asked is how often to test. The solution of this problem is dependent on the time factors involved or the number of influencing variables present. If conditions can change from day to day, then daily testing is necessary. Many factors, however, change somewhat more slowly, so that weekly or even monthly tests may suffice. A complete and detailed study of the process or processes involved will usually indicate the proper time cycle of testing.

Now to consider the problem of how much to test. Again, complete and detailed analyses of the goods to be tested are necessary in order to established a sample size. If goods are highly irregular or variable, larger sample sizes are required than if the goods are uniform and have a relatively low variation.

Standards and specifications for many tests are set forth in the



for industrial humidification **the cd HUMIDIFIER***

***the efficient answer to ANY HUMIDIFICATION PROBLEM!**

Industrial humidification methods reach a new high with the Crowell and Dunn HUMIDIFIER and it's kinetic vapor-activity principle. This unique machine enables plant engineers to balance relative humidity or saturate the atmosphere with water vapor — in each case without the presence of water droplets — a deterrent to human efficiency and material handling.

The great capacity of the C-D HUMIDIFIER to permeate the atmosphere in order to overcome shrinking, curling, wrinkling and warping of raw materials will readily be recognized as a production and storage aid which can be translated into great production economy.

*Patented

ADVANTAGES

- COMPLETELY MIST-LESS. self-purifying water vapor with quieter acting penetrating power.
- COMPLETELY AUTOMATIC controls.
- COMPACT for easy installation and space-saving efficiency . . . requires no ducts.
- SAVES FUEL COST — sustains healthful, comfortable winter conditioning.

CROWELL & DUNN, INC. Air Conditioning & Refrigeration
225 Lafayette Street, New York 12, N. Y.

STEEL

Every Kind

Some steel products are in short supply but over-all stocks are still large, diversified

Plates, Structurals, Bars, Sheets, Tubes, etc. . . . Carbon, Alloy and Stainless Steels . . . .

RYERSON

Joseph T. Ryerson & Son, Inc. Plants: New York, Boston, Philadelphia, Detroit, Cincinnati, Cleveland, Pittsburgh, Buffalo, Chicago, Milwaukee, St. Louis, Los Angeles, San Francisco

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it takes
GOOD BEAMS
to make good warps!

PROBLEM:
ORDINARY BEAMS WON'T HANDLE THE PRESSURES OF NYLON AND RUBBER YARNS!

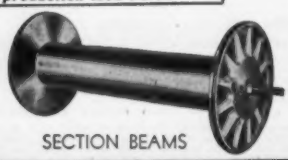
solution . . .
MILTON NYLON & RUBBER TRICOT BEAM

Tested and proven under actual operating conditions, here is Milton's forged head beam designed especially to withstand extreme pressures encountered when warping tremendous yardages of monofilament; fine denier, low turn nylon; and rubber yarns! Heat-treated, aluminum alloy heads and barrels permanently joined with continuous heliarc welds. Write for complete information!

• FORGED HEADS
• RIGID BARRELS

MILTON LIGHT METAL BEAMS are the result of years of close collaboration with mill production men . . .

• PERMANENT MOLD HEAD TRICOT BEAMS



SECTION BEAMS

MILTON MACHINE WORKS, Inc.
DESIGNERS — ENGINEERS — MANUFACTURERS
MILTON, PENNA.

MICROMETRIC products

THE ACME OF QUALITY AND UNIFORMITY

CONDENSER TAPES

Our hides are specially selected and prestretched for tape material . . . they are cut to uniform width and thickness and checked by micrometer . . . edges are squared . . . splices are hand made with cement that is laboratory controlled . . . and a smooth plastic finish is applied for protection and long tape life.

We also produce Condenser Aprons

For mills with the Worsted System we manufacture Comb and Gill Box Aprons and French Rub Aprons.

HAY

JAMES E. HAY LEATHER CO.
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"A.S.T.M. Standards on Textile Materials" published by the American Society for Testing Materials and available from the society headquarters at 1916 Race St., Philadelphia 3, Pa. ASTM Standard D39-39, for instance, covers the standard general methods of testing woven textile fabrics and is applicable to all branches of woven goods. Other standards cover cotton yarns; woolen yarns; worsted yarns; rayon yarns, both staple and continuous filament; and specialized tests for both woven and knitted goods in these fields.

The "ASTM Manual on the Presentation of Data" gives a great deal of practical information on the evaluation of test results and determination of the proper number of tests for predetermined degrees of reliability. A section is also included on some applications of data to quality-control charts which are a valuable method of handling data.

Both of the above mentioned publications are obtainable at a nominal cost and should be acquired by all those interested in any phase of textile testing. They are much more detailed and cover more specific information than can be included in a short discussion.

Approach your testing problems with these questions and sources of information in mind;

1. What to test for? The answer should be settled by a study of necessary qualities and characteristics required in the goods to be tested.
2. How often to test? The answer should be based on an analysis of time factors and process variables.
3. How much material to test? The answer is dependent on the variability of the material to be tested.

Stop-Motion Fires Are Easily Reduced

Loom fires caused by electric stop motions can be prevented by proper installation and maintenance of the stop motions.

Oil-soaked insulation, broken connections, worn or defective parts, and excessive voltage at drop wires are common causes of short circuits and sparks that cause fires.

Stop-motion fires will be reduced if the specifications given here are followed. These pointers were developed through the cooperation of Associated Factory Mutual Fire Insurance Cos., Crompton & Knowles Loom Works, Draper Corp., and other organizations.

TRANSFORMERS. Transformers, magnets, switches, relays, wiring, and

DECEMBER • 1950

CARD CLOTHING NEWS and views

WRITTEN MONTHLY BY E. A. SNAPE, JR., PRESIDENT, Benjamin Booth Company PHILA., PA.

Here are the features that make

STRIP-O-MATIC*

Entirely Different—And Superior!

QUALITY

QUALITY is what counts . . . and is stressed by Booth. In addition to STRIP-O-MATIC, which is our latest type of Card Clothing, Booth offers a complete QUALITY line of conventional Card Clothing for the most exacting & particular mill men.

You can count on Booth's superior clothing to do a better job for a longer time. For it all has QUALITY.

● STRIP-O-MATIC Card Clothing is so different, so superior, so *revolutionary*, that it is *unlike* any card clothing you have ever used. It has been tried and proved.

The leading values of STRIP-O-MATIC are its ability to reduce stripping to a minimum, to card better, and to provide actual dollar savings in many departments.

STRIP-O-MATIC consists mainly of three features:

1. WIRE IS STREAMLINED . . . set and spaced to permit free movement of the stock with no trapping of stock around teeth. Also, wire holds pitch, even under the greatest strain.
2. FOUNDATION (Clear Run) . . . is expressly designed for resiliency plus strength. This allows flexing of wire.
3. PLASTIC FACE is oil and water-proof.

It is the design of these three unique features that reduces stripping, betters production, and earns you profits.

STRIP-O-MATIC is today being used by over 200 textile plants. Repeat orders are received daily. Constantly we receive letters praising the performance of STRIP-O-MATIC.

Are you using STRIP-O-MATIC? If not, you are cordially invited to write us for full details on this remarkable Card Clothing. You will receive free an 8-page color booklet describing STRIP-O-MATIC in full.

Let us hear from you. And thanks.

Sincerely,

E. A. Snape Jr.

President,
Benjamin Booth Company
Allegheny Ave. & Janney Sts.
Philadelphia, Pa.

* Reg. in U. S. Pat. Off.

(ADVERTISEMENT)

A PROVED WAY TO

DEVELOP BETTER

FOREMEN!

Excellent Results in a Large Number of Mills, with Both New and Experienced Personnel

A different kind of training program is producing outstanding results for a number of textile mills—at a time when it is urgently needed. Hundreds of foremen, overseers, and other key personnel have shown vast improvement as a result of the training. One company alone has used the plan for more than 400 of its supervisory personnel.

Superintendents say improvements begin immediately. They classify the major benefits about as follows:

- Overseers begin to "speak the same language" . . . rapidly gaining a common understanding of their problems and opportunities.
- They learn to accept and support management's viewpoint, policies, and supervision.
- Throughout the mill, key men and women are developed into an organization that will work together in a more constructive, more aggressive manner.
- Best prospects for promotion to higher levels are automatically spot-lighted, revealing those most ambitious and best qualified for greater responsibility.
- Without exception, the mills using the plan have reported highly satisfactory results.

The secret of the unusual success of the plan lies in its effective combination of both individual instruction and carefully-planned group discussion. Experience shows that in each group started, nearly 100% completions are virtually assured. The plan is ideally suited for both large groups and small. The cost is low, and in every case can be pre-determined and controlled.

For full information, without obligating yourself in any way, write to W. W. Allan, President, LaSalle Extension University, Chicago 5, Illinois. Complete details of the entire program will be sent to you by mail, together with case-history reports on the experience of others in the textile industry.

other parts should be located where they are not exposed to oil, water, lint accumulation, and mechanical damage.

Transformers should have independent primary and secondary windings rated at not over 100 volt amperes. They should be inclosed in tight metal boxes.

The open-circuit voltage on the low-voltage side of the transformer should not exceed 14 volts. If direct current is used, 12 volts should not be exceeded. The normal current on the secondary should not exceed 3 amp.

CONDUCTORS. Conductors should not be smaller than No. 16 stranded B&S gage in the low-voltage circuit. Insulation should be oil resistant, and the outside cover should be resistant to impact and wear.

If the transformer is located on a separate stand and vibration is severe, the conductors between the transformer and the motor switch should be of flexible cord Type S.O. Watertight connectors should be used. If the transformer is not grounded, a separate conductor should be provided in the cord to connect the two cases. An alternative method for keeping the grounding system unbroken is to use a braided-wire cover for the conductors.

WIRING. All wiring should be fastened to the frame of the loom with clips or straps and not allowed to touch the floor.

Splices should be made in junction boxes, but outside splices are satisfactory provided they are mechanically and electrically secure and are sufficiently insulated.

Where a wire enters or leaves a junction box, an approved insulating bushing or terminal fitting should be used.

If a ground wire is connected to a painted surface, the paint should be removed and burred washers should be used to obtain a good connection.

Ground clamps with conductors not smaller than No. 10 B&S gage should be used for grounding to pipes.

Your Heat Insulation May Need Improving

Many heat losses result from faulty insulation; and, according to information given by The Magnesia Insulation Mfrs. Assn., substantial returns can be made on money invested in correcting these heat leaks.

A list of questions released by the company gives a rough means for rating the insulation efficiency of a heating system. With winter here and the price of fuel soaring, now is an excellent time for checking the heat-system insulation.

Ten questions on the rating sheet score ten points each for a "Yes" answer.

The questions are:

1. Are all major pieces of equipment insulated?
2. Are flanges, fittings, and valves insulated?
3. Are condensate or hot-water return lines insulated?
4. Has damaged insulation been repaired or replaced?
5. If insulation has shrunk excessively, exposing bare pipe at insulation joints, has it been repaired or replaced?
6. If insulation has deteriorated so that its insulating value is reduced, has it been replaced?
7. Are insulation thicknesses economical, based on present fuel costs, insulation costs, operating temperatures, hours of operation, conductivity of insulation, and rate of deterioration of insulation?
8. Have special protective finishes been applied at points where mechanical abuse, excessive moisture, or other hazard to insulation is likely?
9. Have repairs been made to torn, broken, or otherwise damaged finishes?
10. Have loose tie wires or bands been tightened and corroded tie wires or bands replaced?

As rated by Magnesia Assn., a score of 90 or more indicates a well-insulated system; 80 to 90 indicates that minor improvements are needed; 70 to 80 calls for major insulation improvements; and below 70 shows a need for a thorough engineering job on the insulation.

Intersectional Papers

(Continued from page 123)

tester was soon satisfactorily established. But, in spite of the fact that the strip tester has demonstrated a high degree of reproducibility of results, the great number of variables that are encountered in the different ways in which a garment may be handled by each individual consumer (despite washing instructions) precludes accurate laboratory predictability of performance in use.

OIL CONTENT Figured in 30 Min.

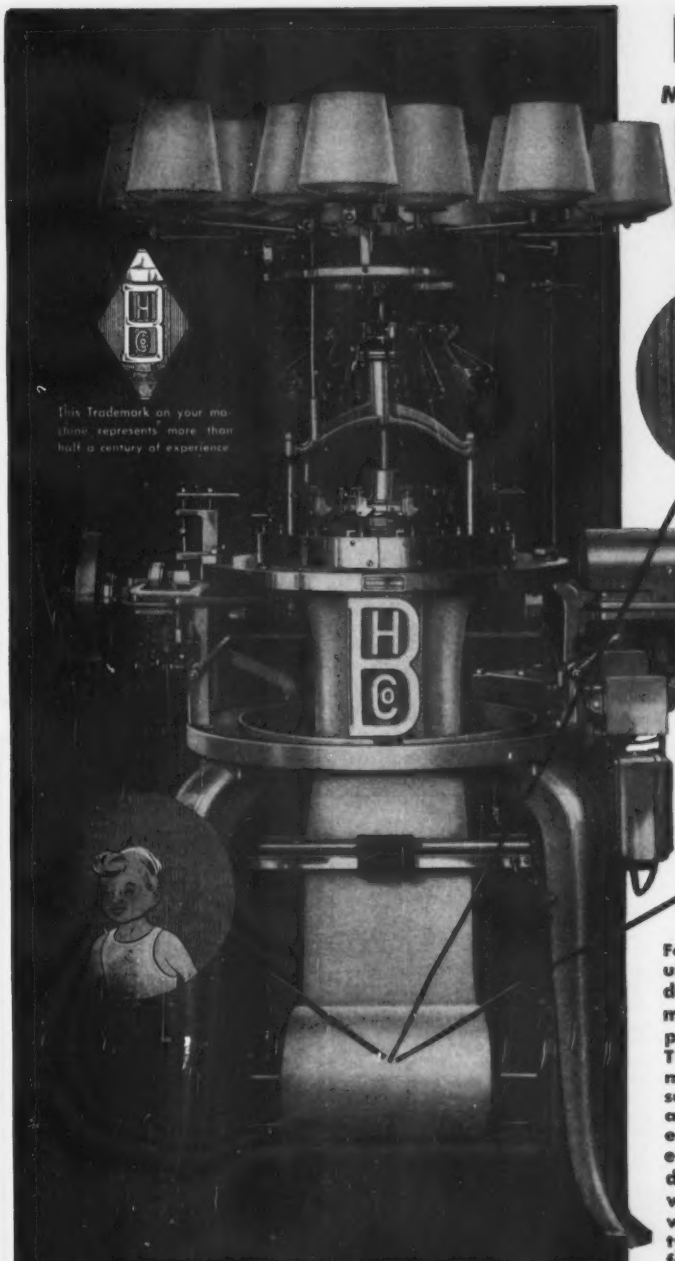
By Northern New England Section AATCC

A simple method which involves no special apparatus, which is very fast to carry out, and which is capable of as

BRINTON

MAXIMUM FEED

RIB BODY MACHINES



For the manufacture of fine underwear for infants, children, boys, men and women, the BRINTON Machines produce a superior fabric. They incorporate every modern feature that assures satisfactory performance — high production — ease of operation and economy. Individual motor drive, electric stop motion with safety control, free wheeling, improved capacity take-up reel and extra feeds. Sizes — 8" to 26" diameter — from 8 to 26 feeds. Plain or automatic 1x1 and 2x2. Precision machines for quality underwear.

Our Bulletin awaits your request.

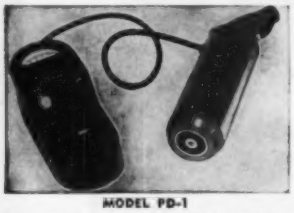
H. BRINTON COMPANY

KENSINGTON AVENUE AND M STREET

PHILADELPHIA 24, PA., U.S.A.

Two Great Models for TESTING MOISTURE CONTENT

in • wool
• cotton
• rayon and
• nylon



MODEL PD-1

for textiles in loose or compressible forms—3" penetration.

MODEL K-2

for textiles in cones, rolls, beams and similar forms.

10-DAY FREE TRIAL!

Try one of these moisture testing instruments for 10 days—use it, test it and prove its superiority. Send samples, moisture range and Purchase Order to cover trial period. No obligation!

Quick, Accurate Readings

In less than 3 seconds you can test moisture content of practically all types of textile materials, including cotton, wool, rayon and nylon in fabrics, packages and loose forms.

This portable instrument is designed for "on the spot" checks in your plant. Moisture Register is easy to operate—requires no technical knowledge or complicated figuring. Cost is negligible in comparison to advantages. Write today for complete details. Specify type of material to be tested.

MOISTURE REGISTER CO.
Dept. G
1510 W. Chestnut St. Alhambra, Calif.

ELECTRONIC MOISTURE REGISTER
Mfd. by Moisture Register Co. 1510 West Chestnut St. Alhambra, California

much accuracy and reproducibility as the standard Soxhlet method can be used by mills for determining the oil content of textiles. The time required is about 30 min. for a single determination, as compared with about 3 hr. using the Soxhlet method. The preferred method, the Aliquot method, is more reproducible (less spread) and more accurate (less error) than the Soxhlet method.

Any mill can use the simple method. Weigh out a 10 gr. sample to be extracted at room conditions on a centigram balance.

Dry the 100-ml. beaker by placing on the clean hot plates (low setting) for 3 to 4 min. Cool briefly, and weigh on the centigram balance. Repeat the procedure until the weight is constant.

Place the sample in the 250-ml. beaker with 50 ml. of carbon tetrachloride carefully measured from the 50-ml. graduates. Work the sample in the beaker, 3 to 4 min., forcing the solvent repeatedly through the sample, using the base of the 50-ml. graduate as a plunger.

Remove 25 ml. of the solvent as follows: Hold the beaker containing the sample and solvent in an inclined position over a 50-ml. beaker. Press the sample firmly with the plunger until 25 ml. or more of the solvent has drained off. Carefully measure 25 ml. of the solvent, using the 25-ml. graduate, and pour into the previously weighed 100-ml. beaker.

Evaporate off the solvent, using a low-setting of the hot plate. Dry to constant weight, using the same procedure as in weighing an empty beaker.

Calculate percent of oil by gain in weight of the beaker. Multiply by two.

Round Table

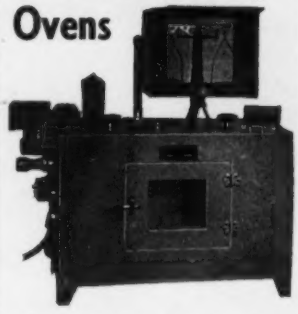
(*Continued from page 176*)

hibition held at Atlantic City, published in your July issue. May I congratulate you and your staff on the splendid coverage of the show which I found quite valuable in bringing to light points missed by the writer and his colleagues.

I also read with considerable interest the excerpts from the 1900 issues of TEXTILE WORLD and the remarks of its founder, Mr. Henry G. Lord. I should like to read the first issue published in 1888, particularly the article describing the first revolving-flat card built in the United States by the Lowell Machine Shop, one of the parent machine shops of the present Saco-Lowell Shops. According to our records, it was not the Lowell Machine Shop that built the first revolving-flat card in the U.S., but another parent of Saco-Lowell (and at the time an intense rival), the Pettee Machine Works.

In 1885, the Nashua and Jackson Mills of Nashua, N. H., tried out a new type of English card built by Platt, similar to the Evan Arthur Leigh patent of 1855. These proved so successful that the directors of the Pettee Machine Shop were shrewd enough to realize that the revolv-

Textile Testing Ovens



For *accurate* testing of water content in yarn. The 8-basket oven, with 3" x 3" baskets, may be changed to 6 baskets, 4¼" x 4¼" both 6" deep. Occupies table space 20" x 40".

EMERSON Ovens

Are built in different types to handle wool, cotton and silk. Baskets are designed specially for each class of work.

Write for details on EMERSON OVENS to fit your process.

EMERSON APPARATUS CO.
177 Tremont St., Melrose 76, Mass.

"WHEN YOU THINK OF FEEDERS—

—YOU THINK OF—

HARWOOD"

Geo. S. HARWOOD & Son
60 Lagrange St., Worcester 8, Mass.

GET ALL THE SPEED YOUR MACHINES WILL TAKE WITH—

LESTERSHIRE

Unit Construction

BOBBINS

INTERCHANGEABLE HEADS

Because they are unit construction, heads can be replaced with heads of other materials when required by changes in the type of yarn being processed.

They are BOTH *Balanced* and *Concentric*

1—Bakelite spindle bearings for smooth, quiet operation.

2—Concentric to .003 T.I.R.

3—Dynamically balanced to eliminate vibration.

4—Satisfactory for nylon—as for all other synthetic yarns.

5—Barrels of Aluminum or Bakelite.

6—Heads of Vulcanized Fiber or Bakelite.

Write for facts about Lestershire Bobbins for your particular purposes.

LESTERSHIRE SPOOL & MFG. CO.

JOHNSON CITY, NEW YORK

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Joseph H. Windle, Jr.—231 So. Main Street, Providence 3, R. I.

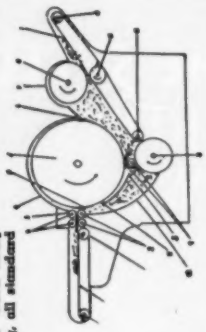
Odell Mill Supply Co., Greensboro, N. C.

Greenville Textile Supply Co., Greenville, S. C.

W. S. Taylor, Inc., 52 Vanderbilt Ave., New York 17, N. Y.

K & D SINGLE CYLINDER WASTE MACHINE DOES WORK OF 2 CYLINDERS

One cylinder does work of TWO! Double opening and cleaning on 1 cylinder. Eliminates extra cylinder, fans, dust rooms. Measures only 11' 6" when using 5' Apron. Weighs only some 2,500 lbs. Uses only 7½ H.P. motor. Cylinder, feed rollers, side shaft, gearing, all standard equipment. Equally successful on rayon, cotton. No damage to fiber.



HOW IT OPERATES

Employs set of double feed rolls (2) for first feed into cylinder; a cut-off (11) 12 inches from rolls drops stock on to a screen (8) carrying it to set of single feed rolls (9) and into cylinder again. This step is equivalent to second cylinder on similar machines. Another cut-off (6) delivers stock to second screen (5) and on to delivery apron carrying to receptacle. Complete process gives double opening and cleaning on one cylinder. Two machines may be worked in tandem, giving same results as 4 sections.

On 30 Days Trial

KIRKMAN and DIXON Machine Shop and Foundry GREENWOOD, S. C.

ing-top flat card was the coming thing and started to design and manufacture a card of their own.

The Pettee Machine Shop card contract book, page 2, shows conclusively that 7 cards (1 right-hand, 6 left-hand) were ordered by the Jackson Mfg. Co., Jan. 12, 1886, and delivered Sept. 28, 1887.

The Lowell Machine Shop record books are not so complete. The only record we can find of this early date is the Card Serial Number Book. This shows that the Lowell Shop delivered to Appleton Mill by April 15, 1889, 37 Platt-style revolving-flat cards. These were followed by 44 more in May of the same year, and two cards for Boott, and one for Pepperell in 1890. No serial numbers were assigned until the card built for Crown in October 1893, which was No. 556.

The number-one card built by the Pettee Shop had the various stands stamped with Serial No. 1, even as we do it today; and this card after running 33 years at the Jackson Mill was returned to the Newton Shop and subsequently moved to Biddeford in 1932.

R. M. JONES
Saco-Lowell Shops
Biddeford, Me.

Pointers for Supervisors

(*Continued from page 164*)

Sounds like petty checking up? He could be guilty of that. The effectiveness of the idea depends upon the attitude of the executive requiring such reports. This industrial-relations head made it clear that he wanted a summary of significant developments that he ought to know as chief of the function.—not a list of activities to show how busy his subordinates were.

Resistance to these reports? Yes. At first the report makers objected to the burden, but the value of the device grew on them. Presently they themselves became fond of the reports as a means of getting ideas across to the boss without time-consuming conferences.

Up From the Ranks

This is primarily a big-company gripe—but it is often heard in the smaller company, too: "The good jobs in the company go to outsiders. An old-timer doesn't have a chance."

To counteract this feeling—which isn't always based on fact—the Caterpillar Tractor Co. of Peoria, Ill., told its workers in a recent issue of its employee publication how some of its top management members started from the bottom.

This isn't a novel idea, but Caterpillar added this different touch. It took pictures of these employees in their original jobs—from which they

IT'S WHAT IS IN THE DRUM THAT MAKES THE DIFFERENCE

for
AFTER TREATMENT
of
NAPHTHOL COLORS
use
RICHMOND'S
DYNYLS

SHORTENS PROCESS
REDUCES CROCKING

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RICHMOND OIL, SOAP AND CHEMICAL COMPANY INC.

Export Agents
HOWARD G. GODFREY AND CO., INC.
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1041 N. FRANKFORD AVE.
PHILADELPHIA 23, PA.

FOR STATIC ELIMINATION

The Simco "Midget" is safe, efficient, inexpensive!

the SIMCO company
9th and Master Streets
Philadelphia 22, Penna.

WATER !

Indispensable to the textile industry is an adequate supply of pure, soft water for processing.

We have plenty of it in the Seaboard Southeast. Numerous streams providing large volume are crossed by our lines in Virginia, North Carolina, South Carolina, Georgia, Florida and Alabama. In many localities underground water is also available at low cost.

Let us tell you about specific locations where there are excellent plant sites in close proximity to an abundant supply of water and such other essentials as railroad and highway transportation, power and labor.

Full assistance will be rendered you in your plant location problem without cost or obligation.

Write:
Warren T. White, Assistant Vice President,
Industrial Department,
Seaboard Air Line Railroad,
Norfolk 10, Va.

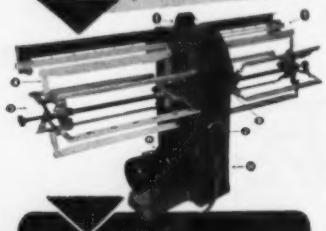
GROW with the GROWING SOUTHEAST!

SEABOARD AIR LINE RAILROAD

THROUGH THE HEART OF THE SOUTH

 For more information, write direct or use Reader Service post card.

The New
FIDELITY SKEIN REELER
OFFERS THESE IMPORTANT
Improvements



1. Automatic skein-weight control.
2. Variable speed control.
3. Free-end collapsible reels.
4. Adjustable reel size.
5. Adjustable yarn traverse.
6. Automatic motor brake.
7. Pedal brake release.
8. Push button start-stop switch.
9. Enclosed drive, safe, compact.

The most radical development in skein reeler design in more than forty years.

Operator efficiency may be increased from 25% to 100% depending on yarn processing methods.

Automatic features eliminate the necessity for constant attention, permitting one operator to service several machines.

Available single end or double end, handling from six to twelve skeins, these new skein reelers are a challenge to old-fashioned production methods. Write for the latest information on this marked advance in skein reeling.

Manufacturers of Intricate precision machinery Since 1911.

FIDELITY MACHINE COMPANY INC.

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FIDELITY MACHINE COMPANY, INC.
3908 Frankford Avenue, Phila. 24, Pa.
Please send me at no obligation:
☐ Brochure, "The Fidelity Skein Reeler".
☐ Simplified Skein Reeler Production Charts.

Company_____

Address_____

Name_____ Title_____

rose to the top. For example, there was a picture of a superintendent in his first job as a dishwasher, surrounded by piles of dishes and wearing the typical dishwasher's cap.

Maybe your company is using some of these ideas, or ones like them, to make its industrial-relations program a success. If you are, we'd like to hear about it. If you're not, why not try it? You'll be helping yourselves by helping your employees.

Toe of Alabama

(*Continued from page 105*)

and brush off the rails four times a day.

Steel-roll cleaner: Clean steel rolls, creelboards, ring rails, roll weights, gear caps, and roll stands on 15 frames each day.

Roll picker: Pick all rolls on 25 frames per shift.

7. Spooler Tailings

One mill gave a system of handling spooler tailings and throw-outs that has reduced its cut-yarn waste 85%.

The system was described as follows:

"The spooler tender checks pieces that go to the bobbin pan. Any pieces that are large enough to run on the spooler are put in the yarn troughs and re-run. Pieces that can't be re-run are put in a bobbin box for the tailing-machine operator.

"The tailing-machine operator straightens out tangled combination-wind yarn and returns it to the spooler.

"Tangled warp-wind yarn is run on a cheese on the tailing machine when possible. Small pieces (where the bobbins show through the yarn) on paper bobbins are run off on the disk on the tailing machine. Small pieces on wooden bobbins are cut off by yarn men."

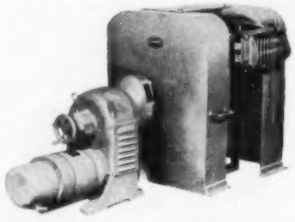
"Our spooler runs 1,200 yd. per min. On 12.25s yarn, our throw-outs amount to 14%; on 22s yarn, they amount to 22.5%."

8. "Wild" Yarn on Spoolers

CAUSES

1. Sloughed yarn
2. Drum laps
3. Cheese revolving after it rises off the drum
4. Yarn breaking at the snick plate, hanging, and pulling off on the next bobbin
5. Spinners and spoolers being careless with yarn tails
6. Doffers not tying down ends
7. Doffers not pulling down spinning traverses properly, leaving long tails

Cuts Right
Whatever Fibre
You Have To Cut



Taylor-Stiles cutters cut any fibre in rove, sliver, or continuous filament into uniform length. Changes in length quickly and easily made.

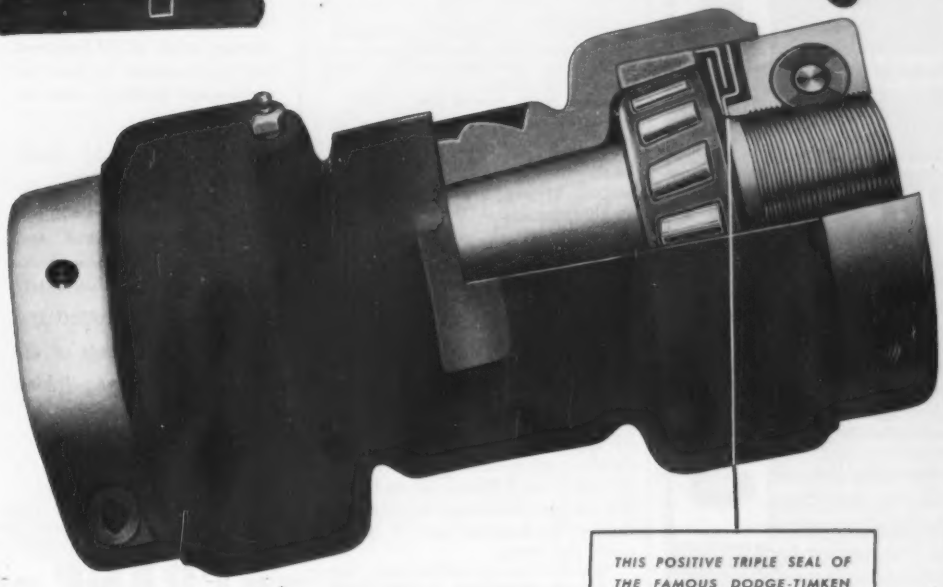
There are also Taylor-Stiles cutters for cutting woolen rags and garments, hard-wound wool strippings and string waste.

Full details in our illustrated catalog.

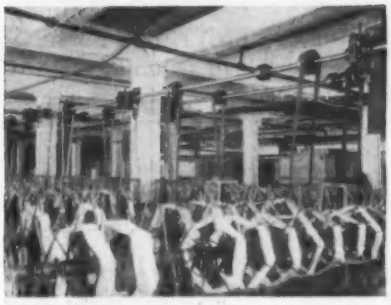
TAYLOR-STILES *Company*

15 Bridge Street Riegelsville, N. J.

Stops Oil Damage!



THIS POSITIVE TRIPLE SEAL OF THE FAMOUS DODGE-TIMKEN TYPE C BEARING ELIMINATES OIL DRIP...HERE IS THE IDEAL BEARING FOR TEXTILE MILL USE!



This installation of Dodge-Timken Hanger Bearings protects quality and profits. Special seals prevent oil leakage on the product, reduce "seconds." Bearings remain properly lubricated, saving labor.

IS OIL DRIP eating holes in your profits? To keep the lubricant where it belongs—*inside the bearing*—switch to Dodge-Timken. These famous bearings, noted throughout the world for quality, have proved themselves in millions of industry's toughest jobs.

The type C Dodge-Timken Bearing is especially adapted to use in the textile field. Its indestructible steel seal positively prevents lubrication leakage—definitely cuts a mill's loss from "seconds."

Available from distributors' stocks—in shaft sizes from 1-7/16" to 3-15/16". Completely assembled, factory adjusted, pre-lubricated and ready to install on the shaft for a minimum of 30,000 hours of uninterrupted service. Call your nearest Dodge Transmissioneer. Or write us for detailed bulletin.

DODGE MANUFACTURING CORPORATION
1400 Union Street • Mishawaka, Indiana

CALL A DODGE TRANSMISSIONEER. He's factory-trained to help solve your power drive problems. Look for his name under "Power Transmission Equipment" in your classified telephone directory.

DODGE
of Mishawaka, Ind.

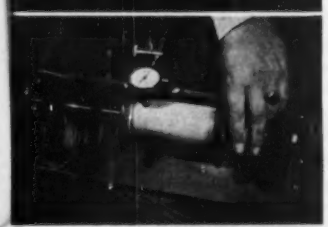
• even loading

• vibrationless running

• concentricity tested

MACK bobbins

This specially designed tester using a model of your own spindle, measures to within 1/1000 inch the concentricity of Mack High Speed Bobbins. This, and Allentown's famous vibrometer test mean that empty or fully loaded you'll have smooth, vibrationless running bobbins.



Look to Allentown for all your bobbin requirements.

ALLENTOWN bobbin works, inc.

ALLENTOWN, PENNA.

or yarn that is slack when it unwinds
8. Chokes on spinning spindles
9. Laps on cheese core and arm, and cheese out of line
10. Rotary brushes worn or not clean
11. Knotter not working properly
12. Suction tubes choked
13. High drum speed

REMEDIES (Numbers correspond with numbers listed under causes)
1. Produce spinning bobbins that don't slough easily
2. Keep drums free of laps
3. Proper setting and brushing of snick plates
4, 5, 6, and 7. First, supervision. Second, keep plenty of air blowing on the yarn and in the yarn pockets at the spoolers
8 and 9. Frequent inspection of the rotary brushes and cheese cores and arms. Keep oil off cheese plough.

Toe of Georgia

(Continued from page 113)

"We ran a test for about three months with metallized sand rolls on 28- and 31-in. E-Model Draper looms. We ran plain and fancy tickings with three to five harnesses and 32- to 66-tooth pick gears.

"Results were so satisfactory that we're now metallizing the sand rolls on all our looms of this type."

Mill L: "We have had metallized sand rolls running about a year. We find that they hold the cloth better than tin coverings.

"They are showing no signs of wear, do not change the picks per inch, and do not mark the finished cloth."

Plastic Loom Sheaves

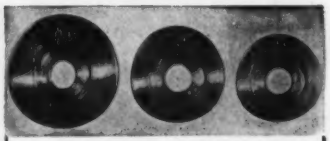
Eight mills like plastic loom sheaves, and six don't.

Mill E reported: "We are using plastic sheaves on about 75% of our dobby and cashmere looms and are replacing wooden sheaves as they wear out. We have been using the plastic sheaves about five years and have had only a few replacements.

"The plastic sheaves have to be handled more carefully than the wooden sheaves, but we find that they will run much longer."

Mill G: "We have some trouble with the rims breaking on plastic sheaves. The sharp edges of such breaks often cut and chafe the harness straps."

Mill T: "We have used these plastic sheaves with Oilite bushings on both cam and dobby looms. We consider the life of the bushings on cam



Wayne Traverse Wheels for use on your Universal No. 90 winders, made of *oil hardened tool steel* cannot be beat for service and quality in their respective fields.

Our hardened steel wheels will last indefinitely, and because of their hardness will not cut or become nicked and therefore damage your silk. These wheels are accurately made. The size is correct and the finish of the face of the wheel is as smooth as polishing can make it.

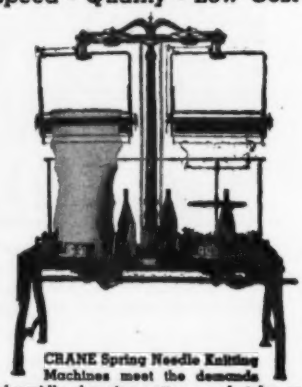
Ask for sample and prices.

WAYNE MFG. CO.
HONESDALE, PA.

1870 CRANE 1951

SPRING NEEDLE KNITTING MACHINES

Speed - Quality - Low Cost



CRANE Spring Needle Knitting Machines meet the demands of rapidly changing patterns and styles on all weights of fabrics.

CRANE
MANUFACTURING CO.
LAKEPORT, N. H.

it's APPEAL

that sells APPAREL!

. . . you can give your products the "buy-appeal"
that really *sells* by having your nylon, silk and rayon yarns
processed by Heineman.
Our reputation for workmanship and reliability has stood the test of time for
57 years, and it means good *business* for you to capitalize on it.
Let us make *your* problems *our* problems. We can
come up with a solution—as always.

"Better today—as always"

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Open Secret in The Trade: If your 15-deniers are made from *twisted* nylon, they'll have a duller finish, more comfort, greater stretch and snag resistance and won't bind or wrinkle at the knees and ankles. It's good business to give women who *insist* on *Twist* what they want—good business for you!

PACKAGE
DYED
ACETATE
for
STRIPES
CHECKS
PLAIDS

Send yarn on cones,
tubes or cheeses.
We return on packages
or cones. Large batches —
skeins eliminated — fast
or commercial colors.

•

Atlantic Rayon
CORPORATION

Dyers and Converters of Synthetic Yarns for All Industries

Plant at Providence 1, R. I.

NEW YORK
REPRESENTATIVE
Empire State Bldg.
Fifth Ave., New York 1

★

looms to be fair (1¼ to 2 years), but on dobbies the life has been very unsatisfactory (8 to 12 months)."

Mill CC: "We are using practically all plastic sheaves, and they are working out satisfactorily. They do not split like the wooden ones; therefore, they prolong the life of the dobby cords."

Cleaning Dobbies

Dobbies are cleaned dry by five mills, and a cleaning solvent is used by seven mills.

Of the five that dry-clean, one only brushes out the dobby and four use air, with or without brushing and mopping.

Of the seven that use a solvent, six spray or brush on the solvent and blow out the dobby with air. The other one uses a solvent wash but does not blow out the dobby.

Mill BB reported: "We don't have any definite schedule for cleaning dobbies other than blowing them off once a day. When a dobby gets dirty and gummed up to the point of causing balks, we dismantle it and clean each part in mineral spirits. Worn parts are replaced, and the dobby is reassembled and put back in operation.

"Our jacquards are blown out every two weeks. As a general rule, this is done on Saturday night or Sunday after the work week is over."

Vacuum Cleaning

Cleaning looms and weave-room ceilings by vacuum is not very successful yet, according to the mill reports.

Mill B reported: "We have never found a vacuum cleaner that was strong enough to remove lint that contained size."

Mill I: "We tried vacuum cleaning on overhead pipes, lights, etc. It was very slow and didn't clean as well as brushing or mopping.

Mill O: "We find this method too slow to be practical with present vacuum-cleaning equipment."

Mill Q: "We have had some experience with vacuum cleaning on looms running print cloth.

"We have found that it is possible to remove loose lint from the reed, harness, drop wires, breast beam, arch, etc., with this type of cleaning. A frequency of once per 48 hr. is necessary to maintain satisfactory operating conditions. Some improvement in quality is possible, since defects caused by blowing off are eliminated.

"The appearance of the looms is not satisfactory, and a thorough cleaning when the warp is out is necessary."

Care of Reeds and Harnesses

In most mills, care of reeds and harnesses is a matter of routine cleaning, inspecting, and repairing or discarding.

Mill A reported: "We have a man who keeps our reeds and harnesses repaired. When a pattern is removed from the loom, the reed and harness are inspected to see that they are in good shape before they are stored for future use on the looms. The reeds are cleaned by running them through the reed cleaning machine. Then they are oiled and placed in storage ready for future use. We keep a perpetual inventory of all our reeds.

"Our patterns are inspected as warps run out. If the reed and heddles are in bad shape, the pattern is replaced.

"Patterns are also cleaned and inspected when they are sent to the tying-in department. If the pattern is in bad condition, it is set aside for repairs and another pattern is used in its place.

"If a reed is removed from the loom for repairs, it is inspected to see what is needed to repair it and if it will be worth repairing. If the wire is bent and needs straightening; it can be done with reed pliers or new wire can be put in. Then the reed is run through the reed-cleaning machine, oiled, and placed in storage.

Shuttles Sided With Fiber

Fiber-sided shuttles are very good when they are good and very bad when they are bad, according to mill reports.

The main trouble seems to be that the fiber dressings are not consistently well glued to the shuttle sides. Several mills encountered this trouble. Other drawbacks mentioned occasionally by mills included: (1) the fiber has a tendency to peel if any damage occurs, and the roughness is hard to smooth out; (2) the shuttles are harder to box properly and require a tighter box than a wooden shuttle; (3) shuttles are easily thrown out of the shed.

Mill B reported: "We tried two fiber-sided shuttles, and the performance was very good. They ran approximately 10,000 hr. on wide looms, 112 picks.

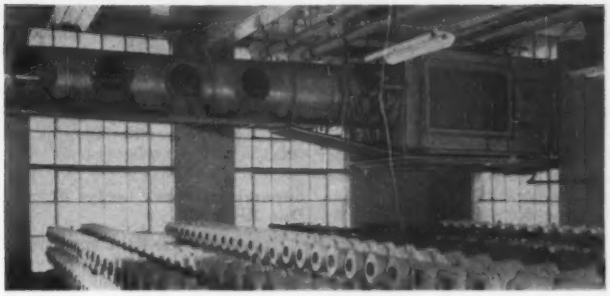
"We then ordered 100 and put them on 40-in. X-model looms, 118 picks. All of them came unglued in ten days. We sent these 100 back to the manufacturer, who reglued 25 and sent them back. These 25 have been running approximately five months and are doing all right."

Mill F: "We started a test run on

TEXTILE AIR CONDITIONING

ENGINEERED and MANUFACTURED BY *Bahnson*

HUMIDUCT UNIT SYSTEM



CENTRISPRAY WASHER SYSTEM

CENTRAL STATION AIR WASHER SYSTEM

Bahnson designed air conditioning systems are the result of 40 years experience in engineering equipment for humidity and temperature control in the textile industry.

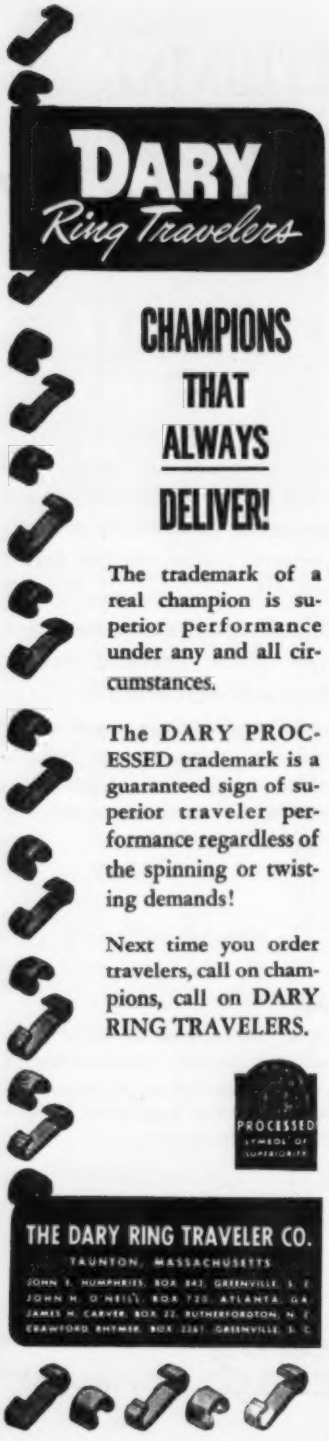
To meet the demands for varied type plants handling various types of fibers, the Bahnson Company has developed and manufactured equipment and systems widely recognized for both economical first costs and operating costs.

Let us discuss your particular problem and present recommendations based on experience, for the air conditioning system best suited for your specific requirements.

Bahnson Company

ENGINEERS AND MANUFACTURERS

WINSTON-SALEM, N. C.


DARY
Ring Travelers
CHAMPIONS
THAT
ALWAYS
DELIVER!
The trademark of a real champion is superior performance under any and all circumstances.
The DARY PROCESSED trademark is a guaranteed sign of superior traveler performance regardless of the spinning or twisting demands!
Next time you order travelers, call on champions, call on DARY RING TRAVELERS.
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SYMBOL OF SUPERIORITY
THE DARY RING TRAVELER CO.
TAUNTON, MASSACHUSETTS
JOHN T. HUMPHREYS, BOX 843, GREENVILLE, S. C.
JOHN H. O'NEILL, BOX 720, ATLANTA, GA.
JAMES H. CARVER, BOX 22, RUTHERFORDTON, N. C.
CRAWFORD RHYMER, BOX 2281, GREENVILLE, S. C.

six fiber-sided shuttles. After two weeks' run, five of the shuttles were taken out and returned because of the fiber sides coming loose. The sixth is still running after 3,000 loom hours and is in good shape. If we do not have an accident, we can get 3,000 hr. more out of it. The five will be returned after the manufacturer tries a new bonding method."

Harness Frames and Heddles

Question: a. Give your experience with aluminum harness frames.

b. What results have you had with Drawtex heddles and frames?

c. Would the additional expense be justified by increased efficiency and quality if the automatic drawing-in machine is not used?

Answer: a. Four mills reported on aluminum harness frames. Three like them; one doesn't.

The one that doesn't like them reported: "They were not rugged enough for some of our heavy constructions."

Mill I reported: "We have found no disadvantages. We think the life of the aluminum harness will be greater than a wooden harness, provided the harnesses are not so crowded that they rub."

Mill AA: "We've used one set for about 18 mo. They show no evidence of wear.

b. Eight mills reported on the use of Drawtex heddles and frames. Seven of the mills find them satisfactory. The eighth mill reported: "No significant improvement in quality was noted."

Mill C: "Results have been wonderful. The work of our weavers, warp men, and fixers has been simplified. Upkeep is negligible."

Mill G: "We have found them satisfactory."

Mill K: "Only three looms equipped. Results very good. Would like to have more."

c. The mill that found no improvement from the use of the Drawtex heddles and frames answered the c part of the question as follows:

"We have found the additional expenditure unjustified, since the head motion on W-3 looms is not strong enough to support the heavy weight of the frames. The use of them will result in additional loom repairs and excessive loom stops."

Mill D: "We believe that the cost could be justified even though the automatic drawing-in machine is not used."

Mill G: "We doubt that we would buy these frames and heddles if we could not use the drawing-in machine eventually."

Mill V: "We think that quality and efficiency have definitely improved and that these frames and heddles are cheaper in the long run. The self-adjusting heddle is a big improvement."

Exploring the Community

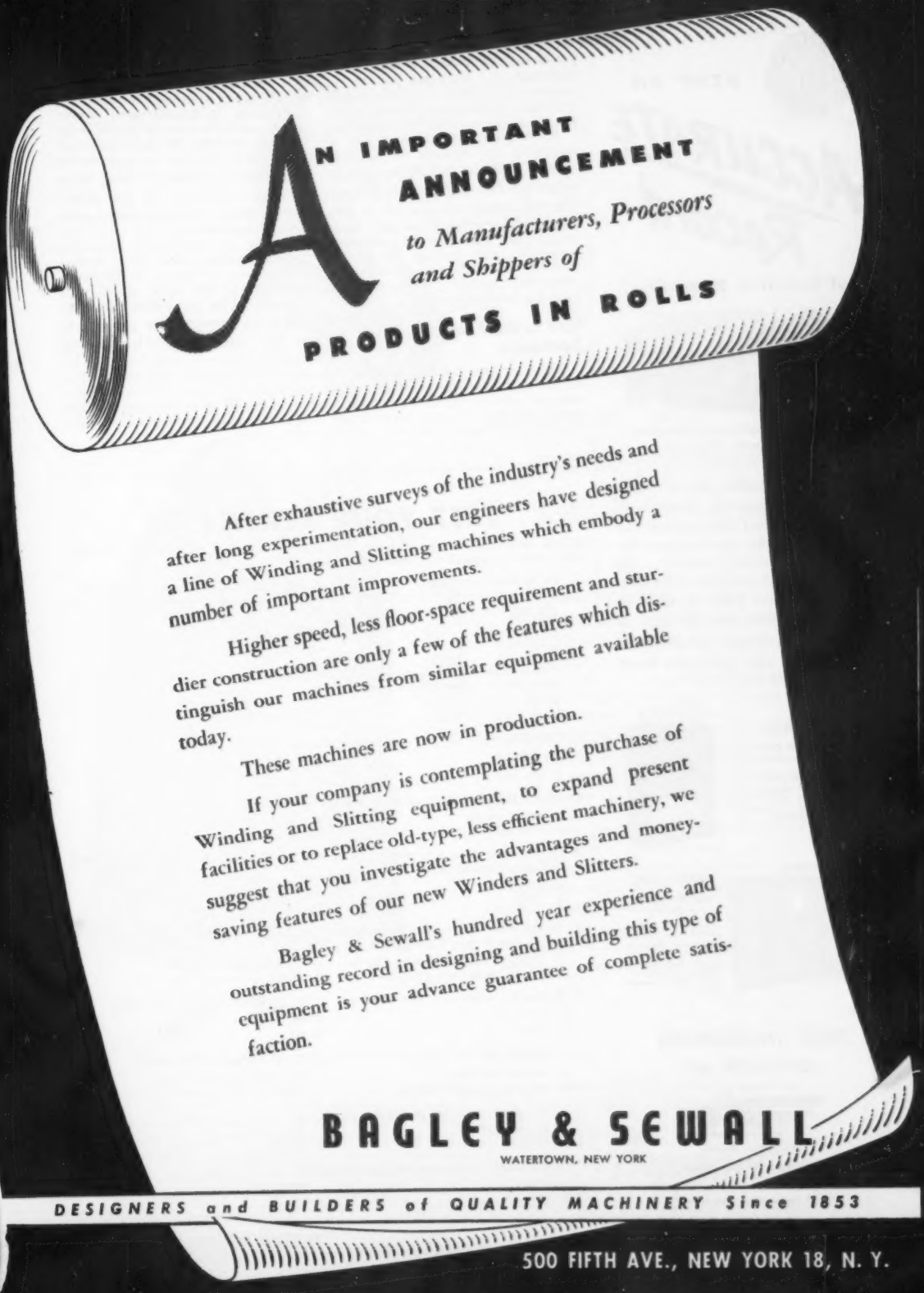
(*Continued from page 163*)

Of course, radio is not the only way to keep workers informed about mill policies. Many mills would find it very costly to install such a system; and unless the broadcasts were done well, they might be worse than nothing. There are several good reasons why radio would not be the perfect answer for every mill. But, in case it is not, there are other systems too.

Supervisory News Letter at Dan River

Dan River Mills has a good system to keep both the supervisory force and the mill workers in touch with business in general and Dan River in particular. This program is a two-way job, including the supervisory force and the workers. In September, 1949, the first issue of the Dan River Mills' *Supervisory News Letter* went to every member of the supervisory staff including section hands, overseers, and superintendents. It continues now on a bi-monthly basis. Its single sheet with attractive printed masthead carries mimeographed news such as the inaugaration of a new canteen system, a course in waste control, organizational changes, mill tours, a national meeting of the mills' large sales force, and other items of interest in which mill policy and planning is predominant. The supervisory news sheet is well prepared, concise, and chock full of news, and is to inform the supervisory force so that they in turn may pass the information along to those with whom they come in contact.

This sheet proved to be so popular that in June, 1950, the *Dan River Digest*, the other member of the news team, made its first appearance. This informative bulletin is mailed to the home of every Dan River employee each month. Its purpose is to keep the workers and their families informed about how they and the other employees fit into the total operation of the company, and how the company fits into the total operation of the textile industry. In other words, it discusses business on an easy-to-understand employee level. "You are one of the 10,000 Dan River employees" the *Digest* says in its first issue. "Your job, plus the jobs of all other Dan River employees, adds up to the total


AN IMPORTANT ANNOUNCEMENT
to Manufacturers, Processors and Shippers of
PRODUCTS IN ROLLS
After exhaustive surveys of the industry's needs and after long experimentation, our engineers have designed a line of Winding and Slitting machines which embody a number of important improvements.
Higher speed, less floor-space requirement and sturdier construction are only a few of the features which distinguish our machines from similar equipment available today.
These machines are now in production.
If your company is contemplating the purchase of Winding and Slitting equipment, to expand present facilities or to replace old-type, less efficient machinery, we suggest that you investigate the advantages and money-saving features of our new Winders and Slitters.
Bagley & Sewall's hundred year experience and outstanding record in designing and building this type of equipment is your advance guarantee of complete satisfaction.
BAGLEY & SEWALL
WATERTOWN, NEW YORK
DESIGNERS and BUILDERS of QUALITY MACHINERY Since 1853
500 FIFTH AVE., NEW YORK 18, N. Y.

BENDIX FRIEZ

KEEP AN

ACCURATE Record

of Relative Humidity!

Precise Atmospheric Control Is Essential to Efficient Textile Production.

Progressive textile plants everywhere are becoming more conscious of the fact that trouble-free and continuous production depends on correct humidity. Be sure of proper records of the conditions in your plant in order to keep the quality and quantity of the product high. Bendix-Friez instruments can give you these all-important records.

BENDIX-FRIEZ

Portable Humidity and Temperature Recorder, Model 160

3" x 5" charts, 10 or 30 hour records. Modern design . . . handy for small space and difficult locations . . . built to meet unusual conditions.

BENDIX-FRIEZ

Hygrothermograph Model 594

The foremost relative humidity recorder for laboratory, factory, and office use. Scientifically designed for accuracy and dependability. Daily or weekly charts.

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job of making finished fabric for our customers. . . Let's say you are in business for yourself. . ." Each month the *Digest* will discuss a business problem from the employee viewpoint.

Another but more indirect way of informing the workers in the mill about a company and its accomplishments was that used by a South Carolina mill which ran a series of full-page advertisements in the local paper giving facts about the mill's history, employees, and policies. It was a small town, and the mill management knew that practically every employee read the local paper.

How to Build Employee Confidence

These are three different approaches to the same problem in human relations in industry. Each is good. Each tends to bridge the gap between the operating personnel and the official personnel. No matter what one's job may be, nothing so breaks down the morale as not knowing what goes on, and having to depend upon rumors which are often false or grossly exaggerated. Nothing lifts the morale and good will of those in an organization more than the feeling of being taken into the confidence of the policy-making group. It automatically creates better understanding and closer co-operation. In addition, it opens the door to management's being treated with similar confidence by the workers. Because turn about is fair play.

It should be the business of every person in a supervisory capacity to see that some pipe line for news on company policy is established in his department and throughout the plant in which he works. It may have a happy pay-off in establishing the best type of industrial relations on your home team.

TEST YOUR TEXTILE IQ

▶ **Each correct answer rates 10 points, a total of 70 is passing; 80, good; 90, excellent; 100—you're a genius. Key to answers is on page 272.**

1. In its bulletin entitled, "Union Procedure in Case of Management Timestudy," TWUA claims that in making a timestudy, it is common practice to study the job for:
   a. 20 hr. c. 500 hr.
   b. 40 hr. d. 2,000 hr.

2. Commitments and expenditures of the American textile industry in 1950 for expansion and improvements will exceed:
   a. $5,000,000 c. $500,000,000
   b. $50,000,000 d. $5,000,000,000

3. The new H&B spinning system is known as model:
   a. A-1 c. S-5
   b. S-3 d. D-4

4. A new automatic screen-printing machine prints fabrics at speeds up to:
   a. 60 yd. per hr. c. 300 yd. per hr.
   b. 100 yd. per hr. d. 600 yd. per hr.

5. An electronic protection motion, developed by Crompton and Knowles, has raised felt-loom speed as much as:
   a. 18% c. 47%
   b. 32% d. 61%

6. Of the several new yarn-evenness testers, one is portable and measures the evenness as the yarn is spun. It is the:
   a. Standard Electronics Yarn Checker c. Uster Evenness Tester
   b. Brush Uniformity Analyzer d. Pacific Evenness Tester

7. Radioactive iodine has been introduced to the textile industry as a tracer in:
   a. dyes c. detergents
   b. sizes d. oils

8. A basically new machine for the final finishing of women's nylon hosiery:
   a. requires no forms c. automatically pairs hosiery
   b. delivers packaged hosiery d. takes out the seconds

9. A new plastic material for bearing surfaces is
   a. Vinyon HH c. Vinylon
   b. Nylon d. Dynel

10. "Coronizing" is a process used to heat-treat:
    a. Orlon c. Fiberglas
    b. Fiber V d. Vicara

streamline your textile processes with "high-light" Kreelon

Want to make better goods . . . faster . . . cheaper? You can do it with Wyandotte "high-light" Kreelon*. That is, *if* you use Kreelon creatively. Here's what we mean. Kreelon is highly soluble in water . . . more *totally* soluble than any other detergent of this type we've tested. That means Kreelon is easier-rinsing. Creative suggestion: experiment with the time period allotted to rinsing, the amount of water you use, and its temperature. Chances are you'll save money on water and fuel.

Here are some facts on "high-light" Kreelon for your creative use: Kreelon is stable in acid, alkaline or neutral solutions. (Suggestion: you need not scour in an alkaline media.) Kreelon works more quickly than soap in most operations and at lower temperatures. (Suggestion: you can reduce processing time in scouring, dyeing and acetate saponification.)

*Reg. U. S. Pat. Off.

SODA ASH • CAUSTIC SODA • BICARBONATE OF SODA
CALCIUM CARBONATE • CALCIUM CHLORIDE • CHLORINE
HYDROGEN • DRY ICE • SYNTHETIC DETERGENTS • GLYCOLS
CARBOSE (Sodium CMC) • ETHYLENE DICHLORIDE • PROPYLENE
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Brass screws and cadmium plated bolts eliminate any possibility of rust. Because they are fastened from the outside they also insure against snagging. The Excel No. 600 is constructed of highly polished cypress or maple and finished with two coats of heat and acid resistant Tropelite to form a durable snag-proof surface. Slatted sides, ends and bottom permit perfect saturation and drainage.

Casters are securely bolted to bottom of truck.

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Mr. Paul Eurey.....Lincolnton, N. C.
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La Grange, Ga.
Fall River Mill Supply Co.
Fall River, Mass.
Mr. Theodore Huston
2601 N. Broad St., Philadelphia, Pa.

EXCEL
Textile Supply Co.

"Excel Trucks Excel"

LINCOLNTON, NORTH CAROLINA

News of the month

To Double Dynel Output. By the middle of the year, productive capacity of dynel will be double that of today, Union Carbide & Carbon Corp. has made known. An additional plant at South Charleston, W. Va., will have been completed by next July. Informed estimates are that dynel is at the moment being produced at over a 2,000,000-lb.-per-year rate. Priced at $1.25 a pound, the fiber is already being used successfully in blankets, draperies, upholstery, pile fabrics, sweaters, men's hose, and tricot and circular knit goods.

Fiber V on Commercial Scale. Fiber V, the newest Du Pont fiber to be brought to a commercial scale (a condensation polymer obtained from ethylene glycol and teraphthalic acid), is to be manufactured on the recently acquired 635-acre tract of land on the Neuse River near Kinston, N. C. Construction will get under way this year. This decision reverses the one made in November on the manufacture of nylon at Kinston. Additional nylon capacity will be provided for instead through improvements and expansion at existing facilities at Seaford, Del., Martinsville, Va., and Chattanooga, Tenn.; and through the licensing of Chemstrand Corp. to manufacture and sell nylon. Du Pont will also erect a chemical plant near its Rapauno plant at Paulsboro, N. J., for the manufacture of intermediates required in the production of Fiber V.

Terylene Gets Green Light. Erection of a plant at Wilton, North Yorkshire, England, for the commercial manufacture of Terylene [see TW, June, '50, p. 117] has been decided upon by Imperial Chemical Industries Ltd., London. The factory, to cost several million pounds sterling, is expected to be in full-scale production within four or five years. Capacity will be 11,000,000 lb. of fiber a year. Future rapid expansion of facilities will be provided for in the construction. Raw materials for

TEXTILE CALENDAR

Hosiery Exposition, Waldorf-Astoria Hotel, New York, Jan. 9 and 10, 1951.
AATCC, New York Sect., Hotel New Yorker, New York, Jan. 12, 1951.
Plant Maintenance Show and Conference, Auditorium, Cleveland, Ohio, Jan. 15 to 18, 1951.
AATCC, Philadelphia Sect., Kugler's Restaurant, Philadelphia, Pa., Jan. 17, 1951.
Western Regional Research Laboratory, wool conference, Albany, Calif., Jan. 17 and 18, 1951.
AATCC, Hudson-Mohawk Sect., Albany, N. Y., Jan. 19, 1951.
CATCC, Quebec Sect., Mount Royal Hotel, Montreal, Que., Jan. 20, 1951.
National Cotton Council, annual meeting, Hotel Buena Vista, Biloxi, Miss., Jan. 22 to 24, 1951.
Air Conditioning Exposition. Commercial Museum, Philadelphia, Pa., Jan. 22 to 26, 1951.
PTI Alumni Assn., 50th anniversary banquet, Warwick Hotel, Philadelphia, Pa., Jan. 26, 1951.
Cotton Research Clinic, National Cotton Council, Finehurst, N. C., Feb. 7 to 9, 1951.
CATCC, Quebec Sect., McGill Univ., Montreal, Que., Feb. 17, 1951.
AATCC, New York Sect., Hotel New Yorker, New York, Feb. 23, 1951.
AATT, Conference on New Fabrics for the Armed Forces, Hotel Commodore, New York, Feb. 28, 1951.
Conference on Industrial Personnel, Columbia University, New York, March 19 to 23, 1951.
ACMI, annual meeting, Greenbrier Hotel, White Sulphur Springs, W. Va., March 29 to 31, 1951.
AATCC, New York Sect., Swiss Chalet, Rochelle Park, N. J., March 30, 1951.
Carpet Fashion Opening, New York, April 2 to 12, 1951.
American Society of Lubrication Engineers, national convention, Bellevue-Stratford, Philadelphia, Pa., April 16 to 18, 1951.
National Packaging Exposition, Atlantic City, N. J., April 17 to 20, 1951.
CATCC, Quebec Sect., Mount Royal Hotel, Montreal, Que., April 21, 1951.
International Textile Exhibition, Parc des Expositions, Lille (Nord), France, April 28 to May 20, 1951.
National Assn. of Hosiery Mfrs., annual meeting, Claridge Hotel, Atlantic City, N. J., April 30, 1951.
Hosiery Industry Conference, Claridge Hotel Atlantic City, N. J., April 30 and May 1, 1951.
Knitting Arts Exhibition, Atlantic City Auditorium, Atlantic City, N. J., April 30 to May 4, 1951.
National Materials Handling Exposition, International Amphitheater, Chicago, Ill., April 30 to May 4, 1951.
Textile Institute, annual conference, Brighton, England, May 1951.
AATCC, New York Sect., Swiss Chalet, Rochelle Park, N. J., May 4, 1951.
AATCC, Hudson-Mohawk Sect., Albany, N. Y., May 11, 1951.
Cotton Mfrs. Assn. of Georgia, annual convention, Sheraton Plaza and Princess Issena Hotels, Daytona Beach, Fla., May 16 to 18, 1951.
Prague International Fair, Prague, Czechoslovakia, May 20 to June 3, 1951.
American Society for Quality Control, annual convention, Hotel Cleveland, Cleveland, Ohio, May 23 and 24, 1951.
Canadian International Trade Fair, Toronto, Ontario, May 28 to June 8, 1951.
ASTM, annual meeting, Atlantic City, N. J., June 18 to 22, 1951.
STA, annual convention, Mayview Manor, Blowing Rock, N. C., June 21 to 23, 1951.
American Chemical Society, diamond jubilee, New York, Sept. 3 to 7, 1951.
AATCC, annual convention, Statler Hotel, New York, Oct. 17 to 19, 1951.

1952

Textile Wet Processing Equipment and Supplies Exposition, 71st Regiment Armory, New York, April 1952.

"WORK" fans that don't ask high wages!

"Buffalo" INDUSTRIAL EXHAUSTERS

These husky all-welded steel plate fans will do 3-shift work for you without babying—whether it's exhausting airborne dust, moisture and fumes—or conveying any materials a pneumatic system will hold. Choice of interchangeable material or air wheels, all with blades shaped properly for efficient work, not "paddle wheel" type. And smooth *rivet-free* interior surfaces add to the efficiency of these fans. One of the most useful—and long-lived—fans for your air removal jobs!

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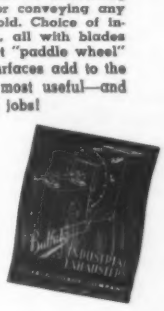
has useful information on many types of exhausting, construction and performance data on "Buffalo" Industrial Exhausters. Worth having!



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Most recommended by engineers for general ventilation purposes, and supplying air to air conditioning apparatus in large installations, these fans offer many advantages. They are quiet, medium-speed, high-efficiency fans with backward double-curved blades and specially shaped inlet vanes—ideally suited in every way for the best air service. Sizes from 600 to 500,000 cfm. All good for decades of service with minimum attention.

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Bulletin 3675

has all construction and performance data on "LL" Fans, including tables, specifications, friction chart, arrangements, etc. . . . a valuable booklet to have. WRITE TODAY!

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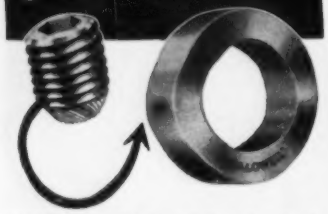
VENTILATING FORCED DRAFT | AIR WASHING COOLING | AIR TEMPERING HEATING | INDUCED DRAFT EXHAUSTING PRESSURE BLOWING

HALLOWELL

Steel Collars



HALLOWELL Solid Steel Collars, functionally proportioned throughout . . . precision-machined so faces run perfectly true . . . are beautifully polished all over . . . yet they cost less than common cast iron collars. 3" bore and smaller are made from Solid Bar Stock. To make sure the collar won't shift on the shaft, they are fitted with the famous UNBRAKO Knurled Point Self-Locking Socket Set Screw—the set screw that won't shake loose when once tightened. HALLOWELL . . . "buy word" in shaft collars . . . available in a full range of sizes for IMMEDIATE DELIVERY.

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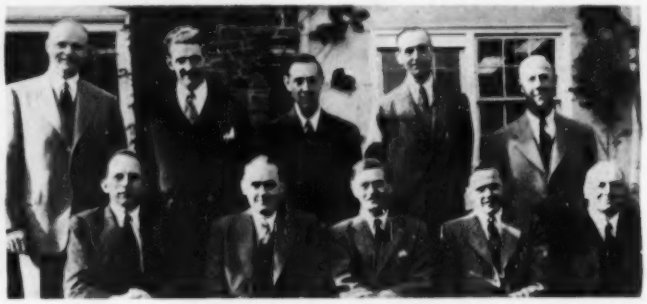
NEWS OF THE MONTH (Continued)



BRITISH TEXTILE SCIENTISTS and educators who recently completed a visit to the United States were photographed the day of their inspection of the Textile Research Institute laboratories at Princeton, N. J. Seated, left to right, are J. M. Preston, *University of Manchester;* J. B. Speakman, *University of Leeds;* W. E. Norton, *University of Manchester;* J. G. Martindale, *Scottish Woolen Technical College, Galashiels, Scotland; and* G. A. Bennett, *Salford Royal Technical College. Standing, left to right, are* J. H. Wakelin, *TRI;* J. C. H. Hurd, *Leicester Technical College;* H. S. Bell, *Huddersfield Technical College;* R. G. Oversby, *Bradford Technical College; and* J. H. Dillon, *TRI.*

Terylene manufacture will be obtained from the oil-cracking plant that ICI has now almost completed at Wilton. Both filament and staple fiber will be produced. In the United States, Terylene is called Fiber V.

Three New Fibers. "Algil," a polystyrene fiber developed into batting form for commercial use by Polymers, Inc., Middlebury, Vt., has a fine filament diameter, does not absorb moisture, is acid- and alkali-vapor resistant, is thermoplastic, and burns under flame. It is said to be under consideration as a substitute for kapok and as a filtering medium. "Ramaton," produced from ramie in natural form by Ramie Products Corp. and San-Knit-Ary Textile Mills, both of Pittsburgh, Pa., is said to be stronger in yarn form than cotton, silk, or any of the synthetics now in use. "Plastylon," a new yarn developed by Buechele & Kovacs A. G., Weiler, Austria, is made of glass "wool" and miscellaneous waste fibers. The glass "wool" is produced in long-staple form. In wool and cotton combinations, Plastylon is processed into upholstery fabrics. Tensile strength approaches that of nylon; elasticity and heat- and moisture-resistance are said to be good.

Fiber-V Dyeing Techniques. Conventional package-dyeing machines can be adopted for Fiber-V dyeing by slight modifications that convert them to pressure-dyeing vessels capable of withstanding pressures of 15 lb. per sq. in., and 250° F. temperature. This amount of temperature is necessary for easiest dyeing of the new fiber, P. L. Meunier of the organic-chemicals department of the Du Pont Co. recently told the Midwest section of the AATCC. The 250° temperature level is important because dye exhaustion and penetration of the fibers are excellent at this point; and in addition, carriers are not required. At the moment acetate dyes provide the only full line of shades for the aqueous dyeing of Fiber V.

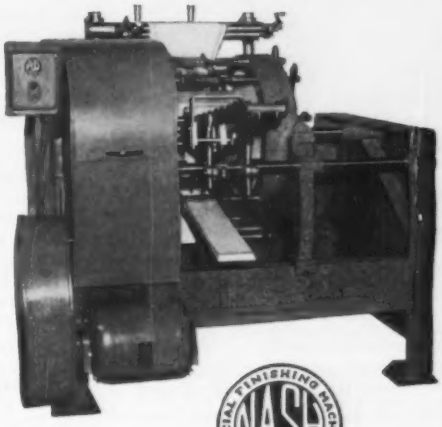
Pre-Emption of Wool Unpractical. A system for the pre-emption of Australian wool was decided to be unpracticable as a means of securing U. S. military requirements, representatives of the U. S. State Dept., Britain, Australia, New Zealand, and the Union of South Africa decided recently in Melbourne, Australia. The meeting was set up to explore the impact our military needs would have on the market for wool, and to set up some sort of system of pre-emption for emergency requirements outside the auction system if necessary. The results of the studies made of a pre-emption system, and of the legal and administrative measures necessary to supplement it, are available in case of future need.

Waste Problem. Just under 500 of the 1,435 textile mills surveyed for the National Water Pollution Control Advisory Board hearings in Boston, Mass., are discharging untreated industrial wastes in New England's rivers and streams, it recently became known. About 70 wool-scouring plants are considered the most serious offenders. The problem is not helped by the fact that in some older mills there are

SAVE the Expense of Hand Washing with the No. 89 Nash AUTOMATIC BOBBIN WASHER

Washes flanged bobbins at 28 pieces per minute!

Textile mills throughout the country are finding the Nash No. 89 a time and money saver. It's a ten-spindle machine that does the entire washing and wiping operation automatically from start to finish. Eliminates the time and expense of hand washing. No dirt is left on the bobbin which would soil the yarn on the finished fabric. The cleaning solution used has a 140-degree flash point and is not toxic, assuring safe machine operation. The solution has no harmful effects on yarn, either natural or synthetic.



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We also manufacture Automatic Bobbin Finishers, Quill Polishers and special-purpose machinery.

J. M. NASH COMPANY

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PRAISES VALUE . . .

. . . of Buying Information

As an important source of Buying Information on all types of textile machinery, equipment, supplies and services, Mr. M. W. Simpkins, Superintendent of the Tirrell Bros. Silk Corp. of Phillipsburg, New Jersey, strongly favors McGraw-Hill's Textile Catalogs.

In a recent statement expressing his evaluation of this handy reference volume, Mr. Simpkins comments, "*We have found your Catalog to be of inestimable value in locating products, manufacturers and sundry other information quickly.*"

If PRE-FILED TEXTILE CATALOGS is not available for buying reference at your mill, write to McGRAW-HILL CATALOG SERVICE, 330 West 42nd Street, New York 18, New York. There is no charge to qualified users.

NEWS OF THE MONTH (Continued)

NEW MEMBERS of the 50-Year Club at West Point Mfg. Co., West Point, Ga., were recently honored with gold watches and checks for $200 each for their half-century of service. The group includes Otis Crowder, Mrs. Carrie Joyner, Rolley H. Bledsoe, Miss Heard Cummings, B. B. McGinty, Gaines Bolt, Mrs. Mary B. Camp, R. W. Jennings, Mrs. Sallie Swann, Jesse Yarbrough, Miss Alvis Canady, James Posey Ray, J. L. Lanier (non member), and John Tom Terry.

no available blueprints of piping layouts among the company records. So individual plant engineers are handicapped in attacking their individual pollution situation.

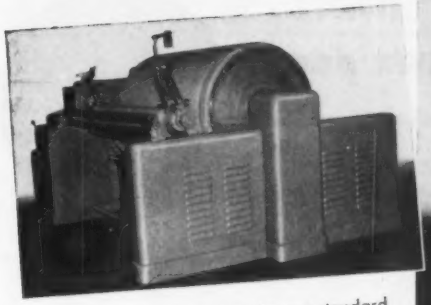
Next NATTM Show in 1954. Arrangements have been made by the National Association of Textile Machinery Manufacturers to hold an exhibit of American textile machinery at the Atlantic City Auditorium, Atlantic City, N. J., from April 26 to May 1, 1954. The association is making the date known far enough ahead so that it will be possible to avoid conflicts with other scheduled events at that time.

Research Conference at Lille. An international textile-research conference will be held at the Lille Textile Exhibition, Lille, France, opening at the end of April, in conjunction with the machinery, fabric, and fashion shows to be held at the same time. Invitations to the conference have been received by textile-research groups throughout the free world. American textile firms exhibiting their products at the show include Armstrong Cork, Crompton & Knowles, Dayton Rubber, Draper, Foxboro, H & B American, Saco Lowell, Universal Winding, and Whitin. A centralized library and reference service—with facilities for the perusal of the world's leading textile publications, technical papers, books, and catalogs—has been set up for visitor convenience.

New TRI Head. André Blumenthal, vice president and assistant general manager of Sidney Blumenthal & Co., Inc., New York and Shelton, Conn., is the new president of Textile Research Institute, Princeton, N. J. He succeeds A. G. Ashcroft, director of research, Alexander Smith & Sons Carpet Co., Yonkers, N. Y. New members of the TRI board include Charles S. Fowler, Dan River Mills; P. S. Howe, Jr., American Thread Co.; and F. Everett Nutter, Goodall-Sanford, Inc.

France Seeks Productivity Answer. The technical and scientific aspects of America's high rate of productivity have been studied for six weeks in the U. S. East and Midwest by the head of France's "brain trust" on productivity, Prof. Jean Fourastie, and two associates, Georges Pacques and Pierre Dervaux. Forstmann Woolen Co., Passaic, N. J., and the International Ladies Garment Workers Union, New York, were among the textile organizations studied by the French government representatives. The free interplay of competition within the textile industry, for example; curbs on restrictive practices for the sake of high profits on a small amount of production; and willingness to streamline productive methods and reassign labor whenever necessary as capacity expands so as both to pay labor more and to meet the challenge of competition through ever-lower retail prices that are possible, are seen by American observers as the real answers the Frenchmen should get from their survey.

New Officers Elected. The Atlanta Textile Club at its December meeting at Atlanta, Ga., elected the following officers for the coming year: president, Herbert I. Avery, Jr., Celanese Corp. of America; vice president, Charles R. Yates, Joshua L. Baily & Co.; secretary, John W. Waddell, Selinger Textile Corp. and Bernside Mills; and treasurer, William M. Woodford, McCampbell & Co., Inc. The steering committee consists of Messrs. Avery and Yates serving ex officio with Donald W. Hawley, John G. Boyle, and William I. Hudson, Jr.



Gessner has set an entirely new standard of decating with the already famous "Versamatic" Semi-Decating Machine. Hydraulically powered, Gessner's Versamatic exercises controls of the decating process never before possible. A wider latitude of cylinder speeds is possible, the problem of apron straightening is practically eliminated with automatic apron alignment and tension, steam is conserved and condensation damage prevented by the unique operation of the cylinder. All drives and drive parts are fully enclosed. A control panel to regulate the entire sequence of steaming and cooling cycles is optional equipment.

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establishes decating quality at a new and higher level

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FOR SPUN RAYON try General Mills FibRsiZ

A WHEAT STARCH!

YES, it's General Mills FibRsiZ—a new wheat starch for warp-sizing of spun rayon. Gives you better weaving performance with elimination of balling and fuzzing. Other advantages of General Mills FibRsiZ, reported by satisfied users, include:

Lower softener (plastisizer) requirement. General Mills FibRsiZ is competitive in user's formula because it reduces need for expensive softeners.

Excellent rinsability. General Mills FibRsiZ's rinsing properties make it easy to remove from fabrics.

Smooth, flexible films.

Stability under agitation. General Mills FibRsiZ has good viscosity—does not thin out under agitation. Also no harmful set-back or "gelation."

New General Mills FibRsiZ is sold in 100 lb. multi-wall bags.

Send for free sample today! See how new General Mills FibRsiZ can improve your fabrics. For test sample, further information—without obligation—write or wire—

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COMBED YARNS
14's to 50's—singles

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8's to 30's—single and ply

SPUN YARNS
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Manufacturers of yarns and fabrics for home and industry

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NEWS ABOUT Suppliers

Equipment Suppliers

Louis Allis Co., Milwaukee, Wis., has opened a new district sales office in Charlotte, N. C. R. J. Overstreet is district manager and will handle company products in southern Virginia and both the Carolinas.

Allis-Chalmers Mfg. Co., Milwaukee, Wis., recently elected Dr. H. K. Ihrig vice president in charge of research. Dr. Ihrig has resigned as vice president and director of laboratories of an affiliated company, Globe Steel Tubes Co. of Milwaukee. Kenneth R. Geist has succeeded Fred E. Haker as director of purchases for Allis-Chalmers. Mr. Haker, retired, had 50 yr. of service with the firm.

Buensod-Stacey, Inc., New York, has appointed Joseph W. Kreuttner, former vice president and general manager of Air Refrigeration Corp., to its general sales department, with headquarters in New York.

Carpenter Steel Co., Alloy Tube Div., Union, N. J., recently named its former West Coast representative, William R. Staples, to the position of assistant to the manager of sales. Paul E. Kelly has taken over Mr. Staple's former duties.

Crane Co., Chicago, Ill., has named J. W. Greene to the newly created position of assistant manager of the valve and fitting department. Mr. Greene had been sales manager of the New York branch of the firm.

Dinsmore Mfg. Co., Salem, Mass., recently made known the appointment of Lewis H. Duke as vice president of the sewing-machine company.

Eriez Mfg. Co., Erie, Pa., has appointed Engineering Products Co., Charleston, W. Va., its sales representative for the complete line of Eriez equipment. The West Virginia firm will also make available research and laboratory-testing facilities through co-operation of the Eriez organization.

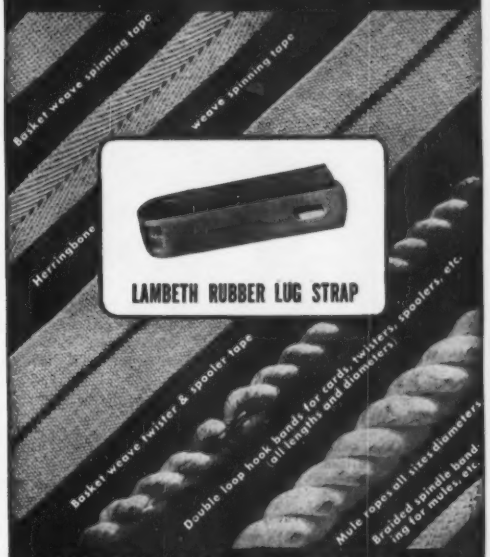
Gardner-Denver Co., Quincy, Ill., is establishing a Canadian plant at Brantford, Ont., so as to provide increased service for expanding Canadian business. Plant production will be handled through the seven branch offices of the company in Canada.

MILTON G. PECK has been appointed sales manager for powered hand trucks by Clark Equipment Co., Industrial Truck Div., Battle Creek, Mich. He was formerly associated with Yale & Towne Mfg. Co. as sales manager of its industrial-truck division.

General Electric Co., Schenectady, N. Y., has named J. T. Farrell assistant to the manager of sales of the small- and medium-motor divisions. He will supervise marketing and promotion, and a newly created gear-motor and package-drive sales division. Howard W. Bennett and Paul D. Ross are managers, respectively, of the gear-motor and packaged-drive sales division and another group, the Erie, Pa., d.c. armored-motor sales division.

Hunt Machine Works, Greenville, S. C., recently appointed Louis W. Bishop, director of the South Carolina State Research, Planning and Development Board, to the post of president of the loom-manufacturing firm. He succeeds John Smith, manager of Renfrew Bleachery, Travelers Rest, S. C., who had been temporary president since Abney Mills acquired a controlling interest in the firm last fall.

LAMBETH PRODUCTS
FOR SPINNING, TWISTING, SPOOLING, WEAVING


Basket weave spinning tape
weave spinning tape
Herringbone
LAMBETH RUBBER LUG STRAP
Basket weave twister & spooler tape
Double loop hook bands for cards, twisters, spoolers, etc. all lengths and diameters
Mule ropes all sizes diameters
Braided spindle banding for mules, etc.

LAMBETH ROPE CORPORATION
NEW BEDFORD, MASS., U. S. A.

TYER
Rubber Covered
ROLLS
For TEXTILE Mills
Compounded of natural or synthetic rubbers to meet specific requirements.

Tyer RUBBER COMPANY
ANDOVER, MASSACHUSETTS

ATLAS
LAUNDER-OMETERS
and FADE-OMETERS
. . . in the new
Riegel
Laboratory

. . . used for quality control, development and testing of products and processes

In the modern, new laboratory recently constructed by the Riegel Textile Corp., Atlas Launder-Ometers and Fade-Ometers make constant quality control possible by providing accurate washing and color fastness data on samples of fabrics being run through production lines.

As part of the research program inaugurated by Riegel officials, these Atlas-Ometers help also to provide complete information on each new fabric while it is still in the developmental stage as well as to maintain the high standard of quality in daily production. In this manner, Riegel avoids costly trial and error methods still practiced in some textile plants today.

Technicians at this laboratory conduct washing tests of the A. A. T. C. C. in the Launder-Ometer to determine the fabric's resistance to shrinking, its color fastness, and resistance to washing and mechanical action. The Fade-Ometer is used to obtain factual data regarding the degree of fading registered on the sample by sunlight, temperature, and humidity. The Atlas cycle timer unit can be set to duplicate any test at any time.

New research model Launder-Ometers with capacities ranging from 20 pint jars to 6 half-gallon containers are now available as part of the complete line of standard Launder-Ometers.

ATLAS ELECTRIC DEVICES COMPANY
361 W. Superior St., Chicago 10, Ill.

how to get better textiles through better chemistry

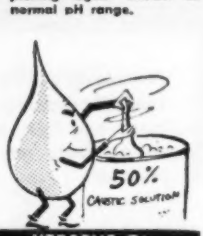
. . THE *Versenes**

VERSENE FE 3 Specific*

Most powerful iron complexing agent known in normal pH range.

VERSENE*

Most efficient general complexing agent. Softens water completely and permanently without precipitation.



VERSENE T*

Prevents and removes iron deposits from fabric treated with concentrated caustic.

VERSENE FE 3*

Prevents hard water deposits and iron stains.

VERSENES AND TEXTILES*

Do you want to *completely* and *permanently* soften process-water *without* precipitation? Do you want Level Dyeing? Would you like uniform shades from the same formula? Do you want *softer* woolens . . . *whiter* cottons? How would you like to cut residual shrinkage in Sanforized goods? Do you want to *purify* and *stabilize* Bleach Baths? Would you like to eliminate contamination from *both* iron and hard water salts *at the same time* in Kier boiling and Mercerizing solutions? In finishing do you want to dispense with oxalate and other acid baths?

THE VERSENES AND YOU*

The *Versenes* are industry's most modern chemicals. They are powerful organic complexing agents for the exacting chemical control of cations in solution. Chemically, they are the sodium salts of ethylene diamine tetra-acetic acid and other polyamino acids in liquid, powder, or bead form. They have exceptional stability at high temperature and pH. Their amazing complexing power and extreme efficiency show you the way to get better textiles through better chemistry.

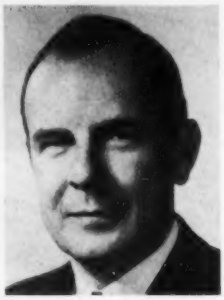
*INVESTIGATE THE VERSENES**

When you want better textiles through better chemistry, the Versenes* will give you sales, process and price advantages over competition. Ask for your free copy of Technical Bulletin #2. Write for samples. *Trade Mark

BERSWORTH CHEMICAL CO.
FRAMINGHAM, MASSACHUSETTS

Warehouse Stocks
Providence Agent:
George Mann, 251 Fox Point Boulevard, Providence, R.I.
W. Coast Agent: Griffin Chemical Co., San Francisco, Los Angeles
Midwest Agent: Kraft Chemical Co., Inc., 917 W. 18th Street, Chicago
Wasatch Chemical Co., Salt Lake City, Utah
Harada & Page, Inc., Dallas and Houston, Texas

NEWS ABOUT SUPPLIERS (Continued)



J. S. NICHOLLS, JR., (left), president of Industrial Tape Corp., New Brunswick, N. J., for the past six years, has become chairman of the board. EDWIN J. FITZPATRICK, executive vice president and director of the company for two years (right), succeeds Mr. Nicholls as president.

Harris Mfg. Co., Atlanta, Ga., recently named H. B. Askew to a position with the company in Atlanta. Mr. Askew had been with National Ring Traveler Co., Pawtucket, R. I., for 18 yr.

H & B American Machine Co., Pawtucket, R. I., has made known the resignation of Elmer J. McVey as vice president and director of the firm. Manager of the company Charlotte, N. C., office for several years, Mr. McVey had been with the machinery company since 1922.

International Business Machines Corp., New York, recently promoted John J. Kenney, director of sales promotion, to the position of general service manager, to be in charge of all customer-service functions of the company. He has been with IBM for 33 yr.

Kuljian Corp., Philadelphia, Pa., has appointed Frank R. Simpson director of research and development. For the past eight years Mr. Simpson directed research projects for the Franklin Institute of Philadelphia.

Belton C. Plowden Co., Griffin, Ga., recently took on Davis E. Williams, Jr., a Georgia Tech graduate of several years ago, as a member of the firm. He will travel in Georgia, Alabama, and Tennessee as a sales representative.

Saco-Lowell Shops, Boston, Mass., plans to purchase land in Saco, Me., for the erecting of the first unit in its plant-rebuilding program. The area, 166 acres in extent, will have a one-story brick and steel building, to begin with, about 300,000 sq. ft. in extent, to house operations now carried on in older buildings on the Saco side of the river. Company plans are incomplete on the disposition of the buildings to be replaced and on the final location of the balance of the buildings to be built.

SKF Industries, Inc., Philadelphia, Pa., has a new president—Richard H. DeMott, who had been vice president in charge of sales since 1943. He succeeds William L. Batt, wartime production expert, recently resigned to re-enter government service as chief of the ECA mission to the United Kingdom.

Textile Machine Works, Reading, Pa., is establishing re-needling service in a new plant in Asheboro, N. C., for the benefit of its Southern customers. The new branch will help ease pressure of defense work at the Reading plant.

Tower Iron Works, Providence, R. I., has added to its staff Stanley Brooks, formerly with Textile Finishing Machinery Co., Providence, and later chief engineer with the Providence division of H. W. Butterworth & Sons Co. Mr. Brooks will work on the development and sales of wet-finishing equipment.

Twin Disc Clutch Co., Racine, Wis., recently appointed Paul W. Wehler service manager of the company, and Robert A. Harmon dealer-sales supervisor. Both men will be at Racine. Mr. Wehler had

COLOR MATCHING

with

PHOTOVOLT Photoelectric REFLECTION METER

A truly practical precision instrument for color matching and for specifying color by tristimulus values, also for fading and detergency tests . . . for production, control and laboratory work.

Portable, sturdy, simple to operate

Write for Bulletin #605 to

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95 MADISON AVENUE NEW YORK 16, N. Y.

Also: Colorimeters, Fluorescence Meters, pH Meters

for Better Belt Joints

To keep belts in service longer, use only GENUINE Clipper Belt Hooks applied with Clipper Belt Lacers.

use Clipper Belt Hooks

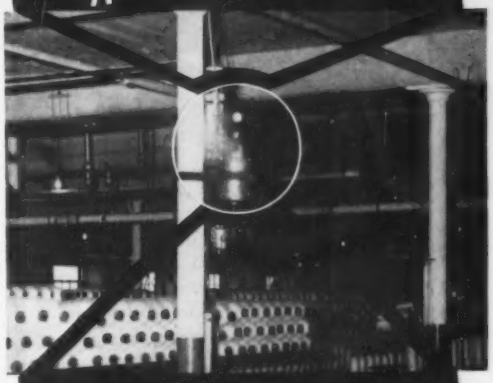
Clipper Hooks are made of the finest quality wire—BETTER than ever before—produced for our exclusive use. Hooks hold with firm, sure grip—give longer satisfactory service.

and Clipper Belt Lacers!

The Clipper No. 9 Portable Lacer laces belts up to 6 inches wide in one quick, easy operation. Under powerful pressure hook legs are embedded flush with the surface of the belt and points clinched, making a perfect joint. Phone your mill supply jobber for a demonstration!

CLIPPER BELT LACER COMPANY, GRAND RAPIDS 2, MICHIGAN, U.S.A.

Question: What about Unit Type Steam Humidifiers?



Answer:
Armstrong Unit Type Steam Humidifiers are ideal for overcoming wintertime dry air conditions for the following reasons:

- **Fully Automatic.**
- **Accurate Control**—within 1%—2% relative humidity
- **Clean**—no residue in the air
- **Quiet**—acoustically designed
- **No cooling effect**—raise room temperature a degree or two
- **Economical to operate**—pennies per day per unit—½ to ¼ the price of water spray equipment
- **Low in first cost**—as low as $120 list complete for a unit to handle up to 40,000 cu. ft.
- **Easy to install anywhere**—hooked up to existing steam and electrical systems much like unit heaters
- **Dependable**—quality materials and workmanship
- **Guaranteed**—complete satisfaction or your money back. Write today.

ARMSTRONG MACHINE WORKS
872 Maple Street, Three Rivers, Mich.

For Full Details Send for BULLETIN 1772

Operating principles, capacities, sizes, prices, hookups, selection data and other useful information—all included in Bulletin 1772. Send for your copy today.

ARMSTRONG *Steam* HUMIDIFIERS

BUILT BY THE MAKERS OF ARMSTRONG STEAM TRAPS

This
HEIM
Spherical
Bearing
PLUS

A rubber bonded fabric body member makes a resilient, shock-absorbing, durable sweepstick which represents the greatest advancement in design in a century.

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HEIM "Unibal"
SWEEPSTICK

Keep on hand a supply of the new Heim sweepsticks so that, as your old style ones wear out, you can replace with these time- and money-saving sweepsticks.

THE HEIM COMPANY
FAIRFIELD, CONNECTICUT

246 For more information, write direct or use Reader Service post card.

News About Suppliers (Continued)

been assistant district manager on the West Coast; Mr. Harmon, field representative and Eastern district sales engineer.

Universal Winding Co., Providence, R. I., is now allowing only 65% of the aluminum consumed during the six months ending last June 30 to go into the production of orders other than those carrying a "DO" or defense rating. Customers were advised individually.

Worthington-Gamon Meter Co., Newark, N. J., subsidiary of Worthington Pump & Machinery Corp., Harrison, N. J., recently elected Robert R. Anderson president, succeeding Charles E. Wilson, new chairman. Mr. Anderson joined the organization in 1922 and had been vice president since 1942. William C. Flanders is now vice president in charge of sales.

Emil V. Wilson Co., Greenville, S. C., has appointed two new representatives for mill-contract work in the Southeast: Wilburn Asbury for sales and service in the Carolinas and Virginia; and B. J. Wilson, representative in Georgia, Alabama, Mississippi, and part of Tennessee. New England representative is William R. Fox, with headquarters in Providence, R. I.

JOHN BIRRELL, for 25 years with Stein, Hall & Co., New York, has joined Morningstar, Nicol, Inc., New York, in a technical sales capacity. His headquarters will be in New York.

Chemical and Yarn Suppliers

VINCENT W. SUELLAU, heavy-chemical sales manager of the General Chemical Div., Allied Chemical & Dye Corp., New York, since 1944, was recently named director of sales of the division. Mr. Suellau succeeds Chester M. Brown, recently elected a vice president.

American Cyanamid Co., Calco Chemical Div., Bound Brook, N. J., has appointed David T. Cornfoot assistant to the manager of the Boston office and W. E. Small assistant to the manager for the Providence office. Cameron Mackenzie is co-ordinator of certain activities between the Bound Brook plant and the New England sales offices. Arthur H. Sampson has retired as New England manager of the dyestuff department. He had been manager since 1923. The division has made known beginning of construction on additional facilities for the production of anthraquinone, completion of which will be in the spring.

Bryant Chemical Corp., Quincy, Mass., has established a Southern office in Spartanburg, S. C. John W. Bryant will cover the territory.

E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., recently named Dr. Bruce S. Farquhar assistant manager of the acetate-fabric development section. He had been affiliated with the acetate division of the rayon department for 14 yr. Millard G. Gamble III is now assistant sales manager for high-tenacity rayon. A new motion picture in color has been produced by the nylon division of

Test Abrasion Resistance

Taber

ABRASER Model 140

New instrument to test wear resistance of fabrics, protective coatings, plating, plastics, rubber, etc.

Incorporates proven rotary rub-wear action of dual abrading wheels, simulating wear under actual service conditions.

Write for new literature.

TABER INSTRUMENT CORP.
114 Goundry Street
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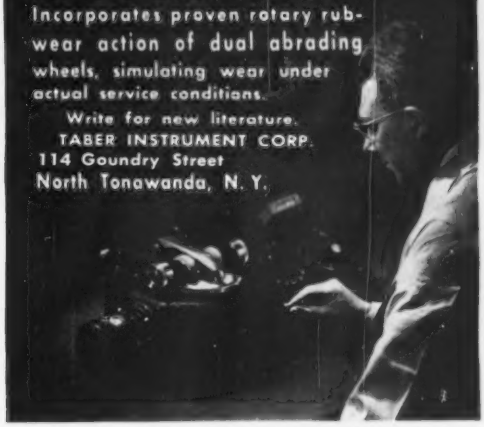
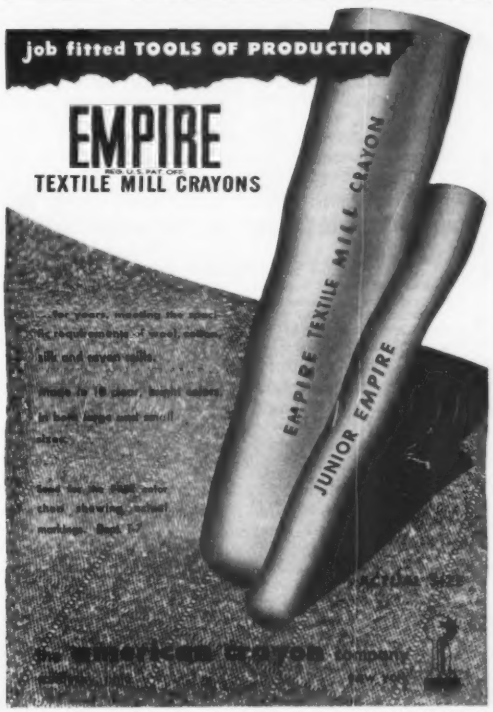


job fitted TOOLS OF PRODUCTION

EMPIRE

REG. U. S. PAT. OFF.

TEXTILE MILL CRAYONS

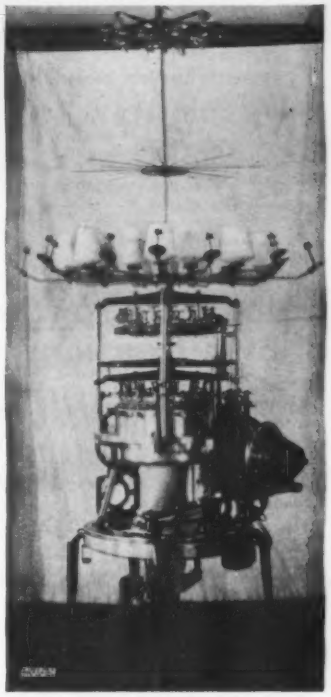


WESCO STOPMOTIONS

FOR

OUTERWEAR • UNDERWEAR • HOSIERY

STANDARD EQUIPMENT
Wildman Knitting Machines



Performance —WESCO Electric Stop-motions on WILDMAN *circular knitting machinery* are the logical choice of men who know how to get the best performance from the machines they buy—Specify WESCO and you get maximum production. Installations are simple and easily made.

LOOK FOR WESCO

on all these knitting machines:

H. Brinton Co.
Charles Cooper Co.
Crane Manufacturing Co.
Edmos Products Corp.
Fidelity Mach. Co., Inc.
Jacquard Knitting Mach. Co.
Lamb Knitting Mach. Co.
Leighton Machine Co.
Ordnance Gauge Co.
Scott & Williams, Inc.
Stafford & Holt, Inc.
Supreme Knitting Mach. Co.
Wildman Mfg. Co.

STANDARD THE WORLD OVER

STOP MOTION DEVICES CORP.

1471-77 Fulton St. Brooklyn 16, N. Y.

Another of a series of knitting machine builders. Others to follow.

NIAPROOF

TRADE-MARK

WATER-SOLUBLE ALUMINUM ACETATE POWDER

for water-repellent preparations

35.5-37.0% Al_2O_3 content

"Niaproof" Aluminum Acetate is readily soluble in water so that any strength of solution can be prepared as required.

ADVANTAGES OF "NIAPROOF" POWDER OVER SOLUTIONS:

STABILITY—No more losses due to precipitation of solutions.

PURITY—No injurious sulfates or chlorides to tender the fabric.

No contamination or discoloration from containers.

SAVINGS—Lower cost per pound of Al_2O_3 content.

Lower freight due to negligible water content.

Lower handling and storage costs.

Containers can be reused or resold.

ALUMINUM ACETATE

and

ALUMINUM FORMATE SOLUTIONS

also available

For further information write to:

Sales Offices: • *932 Niagara Bldg.* • *Niagara Falls, N. Y.*

News About SUPPLIERS (Continued)

the company, called "Close-Up of Nylon," in which explanations are given on why nylon can be both warm and cool, why some nylon pleats are permanent and others not, and some of the other commonly misunderstood points about nylon. The 22-min. film is available for retail training and for educational groups.

Kroy, Inc., Lowell, Mass., has appointed Eben Esmond Whitman assistant to L. W. Lawson, president of the wool shrinkproof-process firm. Mr. Whitman had been associated with his family firm, William Whitman Co., and with Burlington Mills since World War II.

Monsanto Chemical Corp., St. Louis, Mo., has made Edward W. Gamble, Jr., former director of textile chemicals for the Merrimac division, assistant to the vice president and director of industrial preparedness, with offices in Washington, D.C. Chester L. Jones, Jr., assistant general manager of sales for the Merrimac division, succeeds Mr. Gamble in his former position.

JESSE F. YEATES, JR., has been appointed to the fiber-division sales staff of Virginia-Carolina Chemical Corp., Richmond, Va. Since the war he had been connected with Swann Chemical Corp., Birmingham, Ala., and more recently in market research and planning with a steel and iron company.

Philadelphia Quartz Co., Philadelphia, Pa., recently appointed Francis L. Sullivan sales representative in the metropolitan New York area. His headquarters are in Newark, N. J.

Other Services

American Association of Textile Technologists, Inc., New York, has named George H. Hotte of A. M. Tenney Associates, Inc., its president for the new year. He succeeds Dr. George F. Linton, textile-department dean of the Fashion Institute of Technology, New York, who had been president for two years.

Knitted Fabrics Institute, New York, recently formed cotton knitted-fabric group on the national level, has elected Mac Thal of Alamac Knitting Mills, Indian Orchard, Mass., its first president. Jacob P. Rosenbaum was elected executive director and counsel. Other officers include Clarence A. Ross, Barbet Mills, Inc., Lexington, N. C., and Leon Teich, Electro-Knit Fabrics, Brooklyn, N. Y., both vice presidents; and I. C. Bernhard, Bernhard & Levenson, Inc., New York, secretary-treasurer.

Lowell Textile Institute, Lowell, Mass., has received a gift of $15,000 from Burlington Mills Corp., New York, for the Alumni Memorial Library. The school has set up an "atomic-energy room" for research, the radioactive-tracer laboratory where research will be conducted with radioactive materials.

National Lubricating Grease Institute, Chicago, Ill., recently elected Howard Cooper, manager of technical service of Sinclair Refining Co., New York, its new president. Mr. Cooper has been a director of the organization since 1946 and served as vice president during the past year.

Southeastern Travelers Club, Atlanta, Ga., an organization of salesmen traveling throughout the Southeast on textile business, recently celebrated its tenth anniversary. The group, of which Harold S. Edge, Hewitt Rubber Div., is president, now numbers 150 members.

Textile Hall Corp., Greenville, S. C., has elected William G. Sirrine, for 30 yr. president and treasurer, its new chairman. James H. Woodside, former assistant to the president, is the new president and treasurer.

Acme Products

for seamless hosiery knitting

Speak for Themselves

Up-to-Date Machines

Needles

Economy Makers

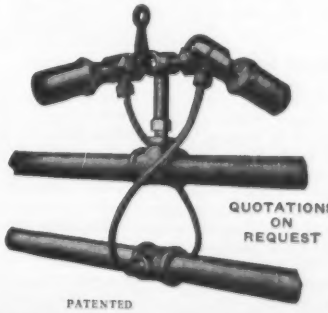
ACME KNITTING MACHINE & NEEDLE CO.

FRANKLIN, N. H.

A Trial Order

One Master Mechanic said, "Our Jackson Humidifiers have operated for more than a year and we haven't put a wrench to one yet. A great improvement over old humidifiers." Other mills have operated Jackson Humidifiers for years. A trial should convince you.

Write for Illustrated Folder



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JACKSON MOISTENING CO., INC.

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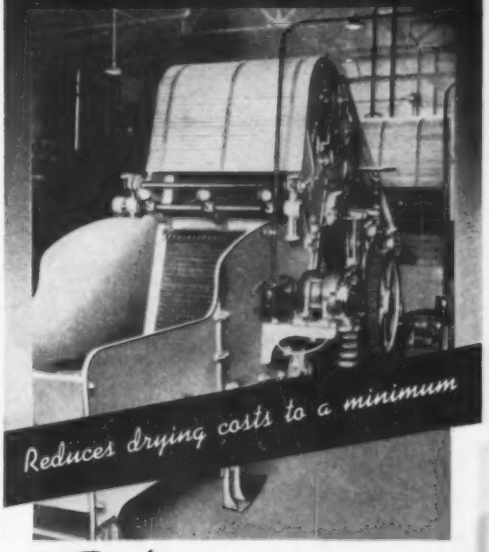
Continuous-Automatic EXTRACTING



TODAY'S

MODERN EFFICIENT METHOD

SINCE 1852

The SARGENT "CONTINUOUS" EXTRACTING SYSTEM is saving thousands of dollars for many woolen, worsted and cotton mills. It employs an Automatic Feeder, the Extracting or Squeeze Roll Machine, and a Stock Dryer. This method of removing surplus dye, bleach, or scouring liquor from wool, staple rayon fibres, shoddy, mixed fibres, cotton and cotton linters, before drying, offers many distinct advantages, including:

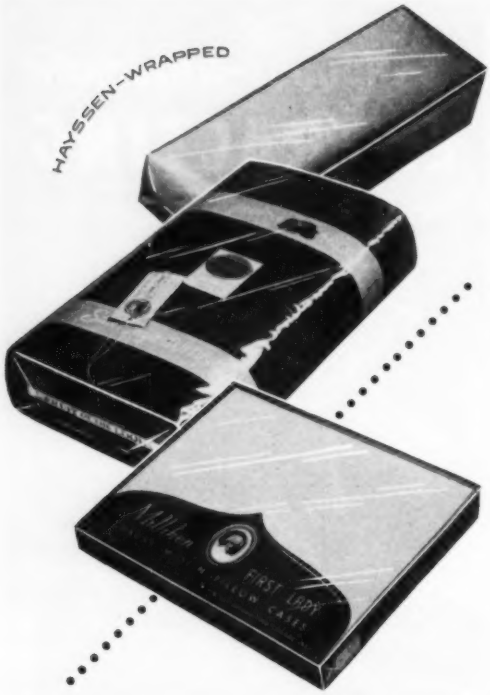
- One-man operation, with capacity up to 2,500 pounds per hour.
- Machine made in five widths for varying plant requirements.
- Even and continuous flow of material into and through the dryer.
- Uniform drying results—savings in power—savings from continuous action—savings in labor, with ease of operation.

Write us for complete details.

LARGEST MANUFACTURERS OF STOCK DRYING AND WOOL WASHING EQUIPMENT IN AMERICA

C. G. SARGENT'S SONS CORPORATION

Graniteville, Massachusetts, U.S.A.



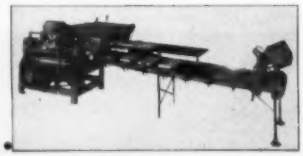
AUTOMATIC WRAPPING...

Packers everywhere, when they take the time to investigate, like the labor-saving features of Hayssen Automatic Wrapping Machines. Low in initial cost, mechanically simple, dependable under pressure, Hayssens keep the wrapping cost at a low level. Accurate registration of printed overwraps is controlled by the Hayssen Electric Eye—and practically any type of wrapping material may be used. For complete information on the many Hayssen models—wrapping machines backed by more than 40 years' experience—write to the factory. Inquiries are welcome.

HAYSSEN MFG. COMPANY • SHEBOYGAN, WIS.

Hayssen
ELECTRIC EYE WRAPPING MACHINES

IT PAYS TO WRAP THE HAYSSEN WAY



NEWS ABOUT Mills

Cotton Mills

Alabama Mills, Inc., Wetumpka, Ala., is enlarging its plant for installation of a new Cocker indigo-dyeing machine, with provision for package and raw-stock operations.

American Thread Co. is moving general offices of its Southern division from Clover, S. C., to Atlanta, Ga.

Appleton Co., Anderson, S. C., by vote of its stockholders, has accepted offer of J. P. Stevens & Co. for purchase of company assets on basis of three shares of Stevens stock for four of Anderson. Anderson plant is being integrated with Stevens group.

Ansonia O. & C. Co., Ansonia, Conn., has purchased Taunton Mills Corp., formerly the Taunton Div. of Verney Corp. and Delite Fabrics, Inc., Pawcatuck, Conn.

Cambri Mfg. Co. Ltd., a new company representing British and Austrian interests, recently purchased a building and four acres of land just east of Toronto, Ont. Work is now under way on additional single-story building. Company will have 34,000 sq. ft. of manufacturing space for weaving and finishing cotton broadcloths. When plant is in full production, it will have annual capacity of weaving of 2,000,000 yd. and finishing 6,000,000 yd.

Clinchfield Mfg. Co., Marion, N. C., is installing central-station humidifying system at cost of about $300,000. Work is in charge of Bahnson Co., Winston-Salem, N. C., and will be completed by Jan. 20. Company is also installing an Abington vacuum card-stripping system and is building second-story addition to warehouse for pumps and tanks for card-stripping service.

Columbus Fiber Mills, Columbus, Ga., has let contract to Williams Construction Co., Columbus, for one-story addition to mill. Cost is reported at over $75,000.

Columbus Mfg. Co., Columbus, Ga., is constructing 50x100-ft. addition to cloth room.

Firestone Textiles, Bennettsville, S. C., has let contract to H. J. Munnerlyn, Inc., for erection of additions to front and rear of plant. Additions, which will provide additional 12,000 sq. ft. of floor space, will be of brick and concrete block.

Georgia Textile Corp., Calhoun, Ga., has completed an addition which adds to plant about 10,000 sq. ft. of floor space.

Grantville Mills, Grantville, Ga., manufacturer of colored yarns, is constructing one-story addition to be equipped for a dyehouse.

Linda Cotton Mills, Cowpens, S. C., is installing 217 Draper looms. Plans call for eventual replacement of plant's more than 500 looms. Installation is part of a $100,000 modernization program planned for completion during 1951.

Lydia Cotton Mills, Clinton, S. C., is adding another story to three-story mill building and is constructing large addition. C. M. Guest & Sons, Anderson, S. C., general contractor, is lowering floor of basement by about 7 ft. to make room for 300 new X-2 looms that will be installed. Mill is also adding 16,000 spindles, giving it a total of 67,000 spindles.

Mary-Leila Cotton Mills, Greensboro, Ga., has begun construction of one-story addition, for which a contract recently was let to Newman Construction Co., La Grange, Ga. Addition will be used as an opener room.

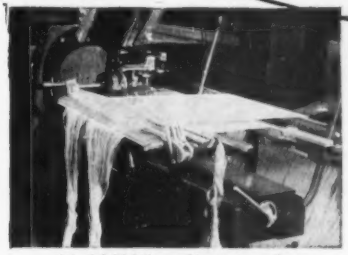
Monroe Cotton Mills, Monroe, Ga., is expanding facilities

BARBER COLMAN

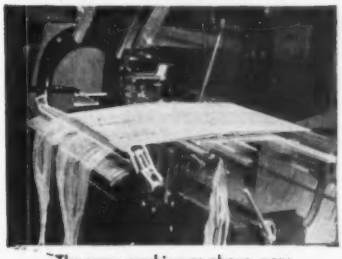
Reduce Costs!
Increase Production!
Improve Products!

TIES IN EITHER PLAIN OR LEASED WARP WITH EQUAL SPEED AND EFFICIENCY

BARBER-COLMAN *Portable* WARP TYING MACHINE



Model "LL" machine set up for tying in a plain cotton warp.



The same machine as above, now set up for a leased cotton warp.

A Barber-Colman PORTABLE Warp Tying Machine can be a *very profitable* investment for you. This machine offers a fast and accurate means for tying-in new warp *at the loom.* It can be handled in confined and hard-to-reach places and in loom alleys as narrow as 12". Overall production capacity averages 3500 to 4500 ends per hour, higher on high sley warps. Models are available to handle cotton, wool, worsted, silk, or synthetics (including monofilaments) and plain warps or leased warps or both. Tying is accurate and uniform and so much more efficient than common hand methods that the machine will pay for itself quickly in cost savings *even when not in constant use.*

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • DRAWING-IN MACHINES

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Write Today for free tube of Plasgon . . . enough for several looms. You'll see why Plasgon is the ideal, trouble-free adhesive to anchor vibration-absorbing loom pads.

SAMUEL CABOT, INC.

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News About MILLS (Continued)

A NEW FIVE-STORY BUILDING addition to its weaving mill in Freehold, N. J., has been opened by A. & M. Karagheusian, Inc. The addition, which adds 105,000 sq. ft. of floor space to the mill, is the ninth major expansion of the original building since 1904. The space will be used for production and finishing of axminster carpets and for velvet weaving. The new building was erected by Turner Construction Co., Philadelphia, Pa. H. C. Carl, Philadelphia, was architect.

to provide 11,000 sq. ft. of additional warehouse space and 45,000 sq. ft. in main building.

New Braunfels Textile Mills, New Braunfels, Tex., has begun construction of one-story warehouse, for which general contract recently was let to C. E. Leslie, Kingsville, Tex. Cost is estimated at $150,000. W. E. Simpson Co., San Antonio, Tex., is engineer.

Pickens Mills, Pickens, S. C., is modernizing its plant. New Saco-Lowell Shaw-system spinning frames and new Saco-Lowell roving frames have been installed in card room. Plant's 638 broad looms are being rebuilt. Company employs about 354 workers.

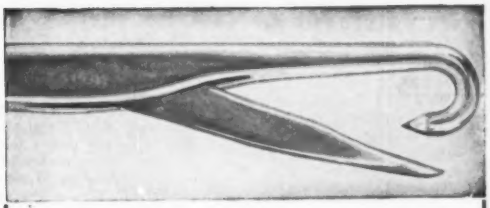
Rocky Creek Mills, Turnersburg, N. C., is constructing new mill as final part of modernization and development program which was started in 1946. New mill is of brick construction, containing 42,735 sq. ft. of floor space. It will be air-conditioned and have cork insulation. Modernization plan calls for 45% new equipment in addition to machinery in old building. All machinery is expected to be in place by May this year. Old building will be used as warehouse. Program also extends to mill village where modernization has been going on.

Tennessee Valley Fabrics Co. has begun construction of a lace manufacturing plant at Sweetwater, Tenn. Five lace machines have arrived from England, as well as five smaller auxiliary machines. Only cotton lace will be made at plant during first few months of operations. Later, nylon lace will be made on some machines.

Textron Southern will expand its Toxaway plant in Anderson, S. C., by adding 320 looms to increase output of print cloth by 63%. 20,000 sq. ft. of space is being added to Southside plant of company, also in Anderson, to house new shipping and slasher room. Building will be a two-story brick and concrete structure. The addition of new X-2 Draper looms will bring plant total to 920 and increase production of 80-square print cloths and carded broadcloths. 120-in.-wide. Draper XD looms will be also installed in Ladlassie plant of Textron Southern to replace older models.

Utica & Mohawk Cotton Mills, Inc., has announced expansion of its operations by construction of a finishing and manufacturing plant at Mohawk, S. C.

Victor-Monaghan Co., a division of J. P. Stevens & Co., Inc., Greer, S. C., has begun a $3,000,000 expansion program which includes construction as well as new machinery and equipment Daniel Construction Co., general contractors for project, started a 55,000 sq. ft. one-story addition in September, which will provide facilities for weave room, approximately 10,000 sq. ft., including apparatus towers, locker rooms, offices, and sample weave room. More than



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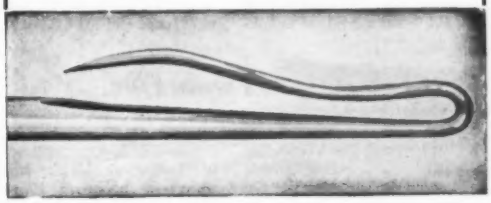

no splinters

no broken wires

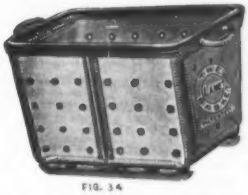

FIG. 34

Conditioning and Steaming Type.

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Canvas Basket

Smooth—light—long-lived.

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Manufacturers

Poughkeepsie, N. Y.

FABRIC DEFECTS

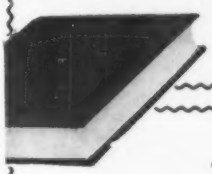
1. A practical guidebook of almost 200 actual case histories of **defects in textile materials, with some explanation of the contributing** factors and suggestions for analysis. It describes the principal types of defects occurring in cotton, filament rayon, spun rayon, and blended fabrics. Over 95 original photomicrographs illustrate gray-goods manufacturing defects from raw fiber through weaving—rayon or man-made yarn faults—dyeing and finishing faults — imperfections which have appeared in finished garments, etc., etc. **By J. B. Goldberg, Research Dir., J. P. Stevens & Co., Inc. 365 pages, 90 illus., $6.50**

DICTIONARY OF COLOR

2. Here's a complete reference for the selection, identification, and precise matching and specifying of 7000 colors. In addition to specimens of 7,000 colors, produced with fine inks and conveniently classified, it provides 3,500 accepted color names. Now brought fully up-to-date, newly developed pigments used in this edition result in improvement of depth, purity, and brilliance of most of the colors. Usable in all activities where exact communication, comparing, and recording of colors is important. **By A. Maerz, Dir. Amer. Color Research Lab., and M. Rea Paul, Consultant, Rahr Color Clinic. 2nd Ed., 208 pages, 9x12, $25.00**

COTTON LOOMFIXERS' MANUAL

3. Here are detailed instructions on the **practical setting, adjusting,** and timing of modern looms. **This guide covers all phases** of cotton loom fixing. If you want a complete course in loomfixing, or only a refresher to broaden your knowledge and increase your skill, this book will fit your needs to a "T." It covers such important subjects as left-off, harness, picking, warp-stop, filling-stop, and protector motions; loom construction; filling feelers; cutters; box multipliers; shuttles, etc. **By Ivar Moberg, Instr. in Weaving, Loomfixing and Designing, Nashua Mfg. Co. 197 pages, 108 illus., $3.00**



RAYON TECHNOLOGY

4. Seventeen experts in the field show you best ways of processing rayon on your own mill machinery. This handbook shows how best to use equipment; analyzes the specific problems likely to arise in using rayon, staple, and brings you practical methods for solving them. It covers winding, throwing, warping, slashing, quilling, and weaving operations, in all divisions of the industry. Discusses the construction of rayon fabrics, both those made of continuous filaments, and those made with continuous filaments supplemented by spun yarns . . . everything you want to know about processing rayon. **By the Tech. Research Dept. of Amer. Viscose Corp. 275 pages, 81 illus. and tables, $4.25**

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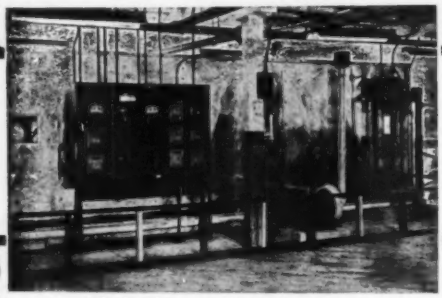

Side view of two zone drying and curing oven.

- Tenter Frame Housings
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News About MILLS (Continued)

6,000 sq. ft. of shipping area will also be provided. Operations will be changed from narrow-loom plain weaving to box-loom wide-goods production. Present employees will undergo comprehensive training in preparation for change-over.

Waverly Mills, Inc., Laurinburg, N. C., manufacturer of plied and single yarns, has installed 144 50-in. Draper model-XD looms in new weaving department. 40,000 sq. ft. of floor space for new looms has been provided by excavating a basement. Company will continue to produce both cotton and synthetic yarns.

West Point Mfg. Co., West Point, Ga., recently increased its authorized capital stock to 5,000,000 shares by vote of stockholders. Directors declared a 100% stock dividend to holders on record as of Nov. 30.

Williamston Cloth Mills, Williamston, S. C., originally Gosset Mills and now a unit of Textron Southern, has begun construction on $1,000,000 addition. New wings are being built by Daniel Construction Co., Greenville, S. C. Expansion will increase number of looms by more than 54% and will add 27,840 sq. ft. to existing mill building. 11,808 additional spindles and 375 more looms will be added.

Woods Mfg. Co., Ltd., Welland, Ont., has let contract to Cameron & Pin, Welland, for construction of replacement for existing weaving room at same location. Cost is estimated at $100,000. It will be one story, 130x249 ft., with steel frame and brick walls.

Woolen and Worsted Mills

Arcadia Woolen Mills, Inc., a new concern recently chartered, has acquired Atlanta Woolen Mills, Atlanta, Ga. New company is headed by John Haney, formerly manager of Atlanta Woolen Mills. Firm will manufacture automotive fabrics.

Bigelow-Sanford Carpet Co. plans to build a research and development laboratory at its Thompsonville, Conn., plant. Laboratory is part of a $9,000,000 improvement program for 1951, including improvements in various plants of company, transfer of loom operations, and other modernization.

George Brown's Sons, Inc., is discontinuing manufacture at its Mount Joy plant in Pennsylvania. Machinery will be sold and building leased. Plant has been manufacturing for 67 years. Owners will concentrate operations at their plant in Lenni, Pa.

Cleveland Worsted Mill Co., Cleveland, Ohio, has installed six more Warner & Swasey looms, bringing total to 24. Officials say that an order for an additional 50 has been placed by mill.

Deering, Milliken & Co., Spartanburg, S. C., plans to construct $2,000,000 woolen mill at Columbus, N. C. Contract has been awarded to Daniel Construction Co., Greenville, S. C. Mill will be known as Hatch Mill, named in honor of Harold Hatch, a vice president and director of company, and will manufacture raw-stock-dyed woolens. Materials woven at Hatch Mill will be finished at Excelsior Mill No. 1, Union, S. C., and Excelsior Mill No. 4, Pendleton, S. C. New mill is scheduled to start production about April 1.

Dumbarton Woolen Mills, Dexter, Me., has been purchased by Dexter Mills, Inc., Dexter, which plans to use facilities for expanding its own production.

International Worsted Mills, Montreal, Que., is starting work on its new mill at St. Hyacinthe, Que., to produce fine gabardines, serges, and fancy-worsted suitings. Estimated cost is $100,000. Building will measure 60x200 ft. Equipment to be installed includes 36 full automatic, heavy-duty, worsted broad looms, 24 of which will be be of Crompton & Knowles make, 2 warpers and creels, and winding and other auxiliary equipment. Max W. Roth, Montreal, is architect.

Lawrence Woolen Co., Lawrence, Mass., has been taken over by Fred V. Hanson. It is understood that ma-

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HIGH-GRADE QUALITY KNITTED
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CONSISTENT QUALITY ASSURED
OUR OWN YARN SPINNING MILLS
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FOR BETTER WOVEN FABRICS
use RECOFERM
the natural "Yarn Food"
in your size formula. It penetrates, holds the moisture longer, makes a smoother, more pliable thread for better interlacing. No more Tear Drops. Excellent for yarn-dyed warps.
OUR TECHNICIANS WILL ASSIST YOU TO WORK OUT A FORMULA TO GET THE MOST OUT OF WARP SIZING.
Use it with
RAYON
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Precision workers do the job faster and more accurately with a MAGNI-FOCUSER. Leaves both hands free to work. Gives needle-sharp binocular magnification, third dimensional vision—with less eyestrain. It restores the usefulness of the skilled hands of many older workers whose vision needs a seeing aid. Now in use in leading textile plants. Particularly applicable to 60 gauge, 15 denier yarn. 10 day trial without obligation. Return if not satisfied. $10.50—Folder on request.

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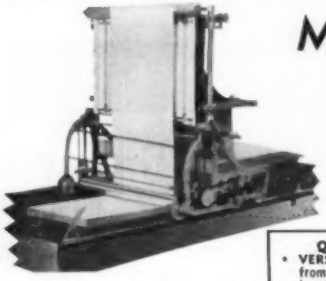
UTICA Hand Laying Up Machine for TUBULAR KNITTED FABRICS



Here's a machine that lays up several times the amount that can be done by hand — and you don't need an expert to operate it. This new lightweight model piles cloth up to 7" high—standard machines 26", 32", 38" and 44" width rolls . . . others to order.

QUICK FACTS
- **VERSATILE**—handles cloth from rolls or folds . . . any lengths.
- **QUICK INSPECTION** — holes and defects easily seen and turned out.
- **NO STRETCHING**—positive feeding eliminates all stretch.
- **ADJUSTABLE FEED** — for different weight cloth.
- **EVEN EDGES AND ENDS** —cloth goes over a spreader . . . no racking or waste.
- **RIGIDLY CONSTRUCTED** —equipped with ball bearings and frictionless bearings.

Check the features of this machine and you'll see why it's the best you can buy for laying up tubular knitted fabrics—*the machine you can't afford to be without!* Write today.

UTICA Novelty and Mill Specialty Company
2145 Dwyer Ave., Utica 2, New York
Builders of Textile Machines Since 1903

NEWS ABOUT MILLS (Continued)

chinery and equipment is being offered for sale.

Samson Worsted Mills, Inc., newly formed corporation, has acquired manufacturing space at 4080 Frankford Ave., Philadelphia, Pa., for weaving textile fabrics. New firm will occupy about 11,000 sq. ft. of space and will employ 60 people.

Trondheim, Norway — Another step toward relieving Norway's textile shortage is being taken by Dales Veveri Mills at Grimstead in southern Norway. Installation of 100 new looms is planned, which will bring annual production to nearly 1,100,000 yd. of shirting and dress materials.

Wool Combing Corp. of Canada Ltd., has purchased a building in Galt, Ont., and will establish there its first Canadian plant to be devoted exclusively to conversion of synthetic fibers of all kinds into top and sliver. Building contains 17,600 sq. ft. of floor space, with 2½ acres of ground to allow for future expansion. A recombing department will be added.

Synthetics Mills

Belding Corticelli will construct a $1,500,000 thread plant in Hendersonville, N. C., area to produce Monocord thread of Orlon acrylic fiber, nylon, and Fiber V.

Bruck Mills Ltd., Cowansville and Sherbrooke, Que., has completed modernization program involving expenditure of nearly $1,000,000 on buildings, machinery, and general equipment. Company has installed 100 new Crompton & Knowles S-6 and C-4 automatic looms. About half of number, installed in Sherbrooke division, is being used in making heavy rayon fabrics, such as suitings. New finishing and dyeing equipment has also been purchased.

Burlington Mills Corp., Greensboro, N. C., plans construction of new plant in Lillington, N. C. Cost will be several million dollars and plant is to be constructed on 325-acre site. Company has also voted to authorize 250,000 shares of new stock. Proceeds from the sale of one-half of this stock (amounting to some $15,000,000) will be used, together with corporate funds, for plant additions and equipment improvements.

Copeland-Fowler Industries, Inc., Burlington, N. C., is beginning operations in new plant in Hopedale. New building contains 60,000 sq. ft. of floor space and provides room for 224 wide looms.

Farmac Mills, Inc., Gastonia, N. C., newly organized, has begun production of spun synthetic fabrics which will be sold in gray to converters for men's and women's apparel trades. New spinning and weaving company was formed by LaFar interests in Gastonia, and Burke M. McConnell, of Greensboro, N. C.

Textron, Inc., Providence, R. I., is planning to expand operations in Puerto Rico to include finishing of gray goods it has been producing there for about a year. Textron Puerto Rico, a subsidiary, is currently negotiating with Industrial Development Co. in Puerto Rico for expansion of its Ponce facilities so that cotton fabrics produced in that plant can be dyed, printed, and finished in Ponce for distribution to Puerto Rican garment manufacturers.

Westover Mills, Inc., Honea Path, S. C., has awarded contract to Daniel Construction Co., Greenville, for 90,000-sq.ft. weaving plant. Between 400 and 500 looms will be installed in windowless, air-conditioned building.

Courtaulds (Canada) Ltd., is planning $3,000,000 additional expenditure on its plant at Cornwall, Ont.

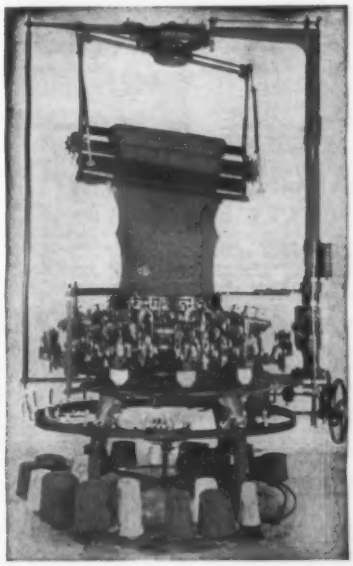
Knitting Mills

A-Q Mills, Timmonsville, S. C., has awarded contract to Boyle Construction Co., Sumter, S. C., for 20,000-sq.ft. addition to mill. Addition is to be completely air-conditioned and will be used to house additional tricot knitting equipment. This is first step in $250,000 expansion program

from RUGGED OVERCOATING to FINE UNDERWEAR MATERIALS . . .

this is your machine . . .

TOMPKINS MODEL S-1
SINGLE HEAD SPRING NEEDLE
KNITTING MACHINE



Here is the finest in circular high speed spring needle knitting machines—with an extreme flexibility and a wide range of capabilities for producing different types and sizes of fabrics! It is a smooth, steady, high-speed production unit capable of turning out approximately 100 yards of overcoating materials per 8 hour day, using six feeds.

Equipped with electric stop motion, visual stop indicator, adjustable furnishing wheels, lighting in cylinder, evenly tensioned take-up, variable speed motor drive.

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BALBRIGGAN (PLAIN JERSEY) RUN RESISTANT & MESH FABRICS
SINGLE PLUSH—DOUBLE PLUSH—PLAITING
TERRY CLOTH—PATTERN WORK
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"Standard" PORTABLE STYLE No. 1530 TAPE SEWING MACHINE

New portable Tape Sewing Machine for sewing Spinning and Twister tapes. Adapted to many other uses. Produces lock stitch and has accurate stitch adjuster. Also has REVERSE MOTION and self-releasing bobbin winder. Hand operated • Compact for small space operation • Adjustable seat • Swivel casters.

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No. 12345
Sizes 56⅞ 56⅝

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Eliminate errors and see that your tags, tickets, labels, etc., are attractively and legibly numbered the SPEED SET way. WRITE TODAY FOR FOLDER describing these new machines used in Cotton, Woolen, Hosiery, Knit Goods, and Dyeing and Finishing plants.

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MODEL A-VT-A
20,000 R.P.M.

This is NOT a grinder, but the original pneumatic tool especially designed for the SPECIFIC Purpose of REMOVING LINT and FLY from the top rolls and other parts of the drafting elements on SPINNING FRAMES also ROVING FRAMES

Spindle design permits using PICK (which gathers the fly and lint), 3/16" diameter by 5" long when used on Spinning Frames and 3/16" diameter by 7" long when used on Roving Frames. Exhaust air directed back of roll picker to prevent fly and lint from being blown into yarn when spinning . . . PATENT APPLIED FOR. Weight only 14 oz. Special grease-sealed bearings. No lubrication required.

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NEWS ABOUT MILLS (Continued)

planned by company.

Bear Brand Hosiery Co., Kankakee, Ind., which recently revealed plans to establish a mill at Fayetteville, Ark., will build another plant in Siloam Springs, Ark. New plant will be of steel and brick construction and will contain 15,000 sq. ft. of floor space.

Flair Hosiery Mills, Inc., High Point, N. C., plans to spend more than $500,000 on extensive improvements to Butler Hosiery Mill, Hartsville, S. C., which it took over recently.

A. F. Garrou & Son, Inc., Valdese, N. C., is changing production of plant from men's seamless half-hose to women's full-fashioned hosiery. It is planned to have plant in full production by March.

Holeproof Hosiery Co., Marietta, Ga., has begun construction of addition to its men's hosiery division. Addition, which will be 80x100 ft., will provide additional space for company dyeing and finishing division. Completion is expected early this year.

Holly-Knit, Inc., Mount Holly, N. C., a division of American Yarn & Processing Co., has received two additional Robert Reiner tricot machines. Firm has placed an order for six machines.

Knit Products Corp. plans construction of a new plant in Charlotte, N. C., to produce Vision stockings and likely to be headquarters for concern which operates three plants of Belmont Throwing Co. and Outlook Mfg. Co.

Pennsheer Hosiery Co., Richlandtown, Pa., has underway an expansion program which will triple production of full-fashioned hosiery and will provide for all operations from knitting to finishing to be carried out under one roof. Firm has been doing its own commercial finishing under name of Pennsheer Hosiery Finishing Co., Inc.

United Knitting Machine Co., Philadelphia, Pa., has sold its hosiery mill at Telford, Pa., to Corona Hosiery Mill, Inc., Philadelphia. Sale involved building, real estate, and plant equipment, which includes four 30-section full-fashioned machines and all auxiliary equipment.

Dyeing and Finishing Plants

Clearwater Finishing Co., subsidiary of United Merchants & Manufacturers, Inc., has purchased a tract of 257 acres along Broad River near Carlisle, S. C., for construction of $15,000,000 textile plant.

Crompton-Shenandoah Co., Waynesboro, Va., will erect a $2,000,000 plant at Osceola, Ark. Company will employ 400 on bleaching, dyeing, and finishing corduroys. Company now operates a spinning and weaving plant at Morrillton, Ark., recently acquired and modernized.

Deering, Milliken & Co., finishing plant, between Pendleton and Clemson, S. C., is now undergoing a million-dollar expansion program. General contract for this work is held by Daniel Construction Co., Greenville, S. C. It is expected that expansion will almost double present capacity.

Hawthorn Finishing Co., subsidiary of H. Wenzel Tent & Duck Co., St. Louis, Mo., established recently to finish and treat cotton duck and canvas, is to be located in a new building now under construction adjoining the Wenzel plant on Hickory St. The one-story plant will contain about 18,000 sq. ft. of floor space. Land, building, and equipment are expected to cost approximately $175,000. Plant will have annual capacity of 5,000,000 yd. for treating duck and canvas with waterproof, mildewproof, flameproof, and other special finishes.

North Carolina Dyeing & Finishing Co., Greensboro, N. C., formerly finishing 400 doz. prs. of nylon hosiery per day, has doubled production and added more employees.

Utica Mohawk Cotton Mills, Inc., Utica, N. Y., has begun work near Seneca, S. C., on a 900-acre site for a new multi-million dollar finishing plant.

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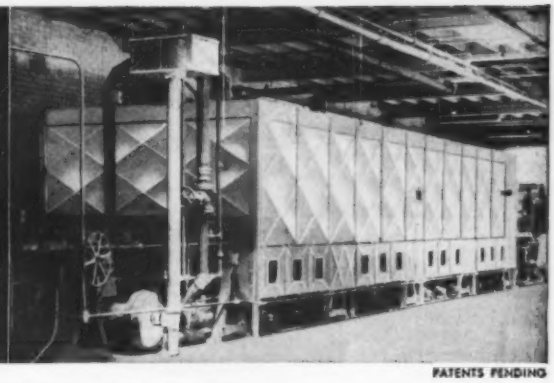

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NEWS ABOUT *Men*

Simpson J. Adams has joined Schneider Mills, Taylorsville, N. C., as superintendent, replacing **Francis D'Orsey.** Mr. Adams was formerly superintendent of Deering, Milliken & Co., Inc., mill at Abbeville, S. C.

David G. Ashton as joined Dan River Mills, New York, to take charge of stormwear and outerwear-fabrics department. He was formerly with J. P. Stevens & Co.

Clarence Bird has become superintendent of Ware Woolen Co., Ware, Mass., succeeding **L. R. Alexander.**

George L. Boll has joined J. P. Stevens & Co., Inc., as special assistant to **John M. Hughlett.** He resigned from Dan River Mills, Danville, Va., where he was assistant secretary and administrative assistant to the sales executive committee.

Emil Born has become superintendent of woolen-yarn department at Wyandotte Worsted Co., Waterville, Me. He was formerly with Aldon Spinning Mills Corp., Talcottville, Conn.

Chester H. Boyce, general manager of Verney Corp., Brunswick, Me., has resigned to become general manager of Goodall-Sanford, Inc., plant at Sanford, Me. **Harry Baldwin,** a vice president at Verney, will succeed Mr. Boyce.

Roy A. Brasil, formerly superintendent of Aragon Mills Div., A. D. Juilliard & Co., Inc., Aragon, Ga., has been promoted to general superintendent.

Paul Brett has been elected vice president in charge of West Coast sales of Wamsutta Mills, New Bedford, Mass. He has been a member of the organization for 18 years. **Harry V. Banks,** has been appointed comptroller of the firm, succeeding **Richard N. Stone,** who is now director of the sales-service department.

WILLIAM G. SIRRINE, for 30 years president and treasurer of Textile Hall Corp., Greenville, S. C., has resigned from these positions and been unanimously elected chairman of the board. Mr. Sirrine has been succeeded as president and treasurer by James H. Woodside, who was active as assistant to the president during the recent Southern Textile Exposition.

John W. Burke, Jr. has been elected a director of A. D. Juilliard & Co., Inc., New York, succeeding the late Lamar Hardy.

Emery N. Cleaves, Edward R. Allan, and **H. E. Martin** have been elected vice presidents of Celanese Corp. of America, Cumberland, Md. Mr. Cleaves is in charge of public relations, Mr. Allan in charge of labor relations, and Mr. Martin in charge of cellulose acetate division.

Hayden C. Cobb has been named general superintendent of Mooresville Mills, Mooresville, N. C., succeeding **W. B. Thomas.** Mr. Cobb has been with Mooresville since 1937, most recently serving as planning and production manager.

Dr. Jack Compton, former head of Celanese Corp. research at Rome, Georgia, and more recently technical director of the chemistry section at the Institute of Textile

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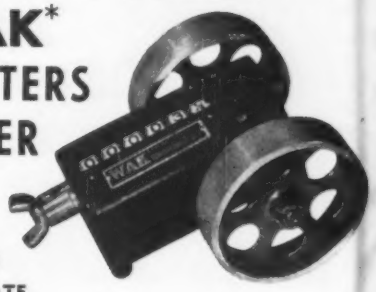

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News About MEN (Continued)

Technology, Charlottesville, Virginia, has been made technical director of all branches of the Institute's research program.

Alan Cone has been named secretary of Mineola Mfg. Co., Gibsonville, N. C., and **Edwin G. Holt** has been elected an assistant vice president of the parent corporation, Cone Export & Commission Co., Greensboro, N. C. Mr. Cone, son of Herman Cone, president of the organization, has been with the company since 1947.

S. J. Graig, Jr., formerly of Greenville, S. C., has been appointed general manager and superintendent at new Deering, Milliken & Co. plant which will be built at Columbus, N. C. He has been connected with company Excelsior Mills No. 1, Union, S. C.

Marvin Cranford, who has been associated with Avondale Mills at Sylacauga, Ala., as an assistant to general superintendent, has resigned to accept position with Dan River Mills, Danville, Va.

DR. A. F. TESI has been named assistant to the technical officer of Celanese Corp. of America, New York. Before joining Celanese, Dr. Tesi was director of testing and merchandise standards for W. T. Grant Co. Active in the field of consumer standards for many years, he is a member of the ASTM, AATCC, AATT, and of the American Chemical Society.

Harry Davis, overseer of carding at Aleo Mfg. Co., Rockingham, N. C., has been promoted to assistant superintendent. **E. T. Lollis** has resigned as general superintendent of weaving and has been succeeded by **Harry D. Freeman.**

R. C. Dick has been elected vice president of Naumkeag Steam Cotton Co., Salem, Mass.

John W. Etzel has been elected president of Paris Woolen Mills, Stayton, Ore., to succeed the late John B. Powell. **John B. Powell**, son of the late Mr. Powell, was elected vice president and treasurer. **Mrs. E. J. Phillips** was chosen secretary.

Emery A. Gibson has been named vice president of H. L. Whiting Co., Los Angeles, Calif. **Stanley W. Sharpe** was named treasurer and **Paul H. Blanton** was named to board of directors.

Maitland L. Griggs has been named to newly created post of vice president in charge of special services of Alexander Smith & Sons, Carpet Co., Yonkers, N. Y. He was formerly vice president and treasurer.

Mrs. J. A. Groves has been elected vice president and assistant treasurer of **Peerless** Spinning Corp., Lowell, N. C., and **Harry L. Sturgis** has been named assistant secretary. All other officers and directors were re-elected.

L. J. Harris, for past two years manufacturing superintendent of Old Hickory rayon plant of E. I. du Pont de Nemours & Co., Inc., has been transferred to company nylon-yarn plant at Chattanooga, Tenn., filling newly created post of personnel superintendent. **Dr. Carl Henningsen** has been named service superintendent in Chattanooga, succeeding **M. N. Roberts**, who has been placed on special assignment.

F. M. Holmes, Jr., director of standards department of Fieldcrest Mills, Leakesville, N. C., will leave at once for Germany on three-month leave of absence. He is serving as consultant to the industrial division of ECA.

Alex R. Howard, a vice president and director of Cannon Mills Co., Concord, N. C., retired at end of the year. He held these posts for 22 years and was with company for 45 years, serving 23 years

News About MEN (Continued)

in other capacities.

G. M. Huguley has recently become superintendent of Clinton Mills, Clinton, S. C. He was formerly superintendent of the upper mill of Pelzer Mills.

F. M. James, personnel supervisor of Burlington Mills plants at St. Pauls, Robeson, and Butler, all in Robeson County, N. C., for past five years, has been transferred to a new position at High Point Weaving Co., High Point, N. C. He succeeds **Shore Neal**.

Charles Lachman has been elected a director of Mohawk Carpet Mills, Amsterdam, N. Y., succeeding **S. M. Brown**, who resigned as vice president, treasurer, and director. **William McCleary** was appointed treasurer.

Robert H. Lankford, Jr., production manager of Chatham Mfg. Co., Elkin, N. C., has been made assistant to **Fred L. Neaves**, general superintendent. **Walter C. Mentz**, assistant production manager, has been named production manager.

Dudley G. Layman has been appointed executive vice president of William Whitman Co., Lawrence, Mass., in addition to his duties as treasurer.

Irvington Layton is now assistant vice president of Robbins Mills, Robbins, N. C. He has been with company since 1947.

A. Meilke has resigned as superintendent of Patterson Mills Co. plant at Roanoke Rapids, N. C., after holding that position for past 21 years.

Nat J. Newman has resigned from posts of vice president and director of Mojud Hosiery Co., Inc., New York. Mr. Newman has been with firm since 1927.

C. L. Pierce has resigned as treasurer at Jordan Mills, Inc., Columbus, Ga., after serving in that office for 17 years. **Roy Thurmond**, who has been secretary has replaced Mr. Pierce as treasurer, and **Harold Ruff** has become secretary in addition to his present position as purchasing agent.

L. F. Prossen has been named plant manager of Hopewell unit of Celanese Corp. of America, succeeding Reginald Hays, who has become general manager of Celanese Colombiana, S. A., plant near Cali Colombia, South America. Mr. Prossen joined Celanese in 1945 as industrial engineer for Rome, Ga., plant. He had held an executive position in company New York office.

Leonard Roberts has become associated with Classe Ribbon Co., Anniston, Ala. He recently resigned his position as assistant manager of Linen Thread Co. plant at Blue Mountain, Ala.

E. C. ATWELL, formerly director of quality control for Textron, Inc., has joined Burlington Mills to head technical-services section of company laboratory at Greensboro, N. C.

Samuel F. Rubin has been elected to newly created post of executive vice president of Gotham Hosiery Co., New York. **Roy E. Tilles, Jr.**, has been elected vice president in charge of sales. **E. L. Winpenny**, vice president and director of sales, will retire from present activities but will remain on board of directors and act as sales consultant.

John F. Schenck III, has been named vice president of Cleveland Mill & Power Co., Lawndale, N. C. Mr. Schenck was formerly general manager

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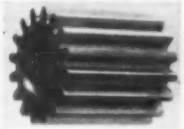

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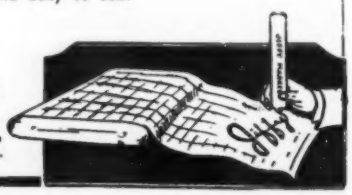


NEWS ABOUT MEN (Continued)

and treasurer of Double Shoals Mills Co., and Lily Mills Co., both in Shelby, N. C.

James Southern, formerly of Forsythe county, will be transferred to Duplan Corp., Burnsville, N. C., to deal with production problems.

James A. Stevenson has been elected vice president of Bradford Dyeing Assn., Bradford, R. I. **James Ewing** continues as president, with **Walter R. Howell** and **John A. Pawson** as executive vice president and general manager respectively. **George L. Baxter, Ernest L. Chornyei,** and **Geoffrey Chamberlain** were elected to board of directors.

Rufus K. Smith, executive of Owen Osborne Hosiery Co., Gainesville, Ga., has been named manager of full-fashioned knitting division of Chadbourne Hosiery Mills, Inc., with headquarters in Charlotte, N. C. Chadbourne recently purchased Owen Osborne.

Michael Stefanchick has been transferred from Duplan Corp., at Hazleton, Pa., to Greensboro, N. C., where he has been assigned as quality control superintendent of weaving mills in Duplan's Southern division.

Arthur Speakman, secretary and treasurer of Hollands (Canada) Ltd., Smiths Falls, Ont., was recently transferred to company's main textile plant in Manchester, England. He has been succeeded in Smith Falls by **G. R. Dawson,** formerly mill superintendent.

Dr. Howard W. Swank, manufacturing superintendent of acetate plant of E. I. du Pont de Nemours & Co., Inc., Waynesboro, Va., has been named director of nylon research succeeding **Hood Worthington. Andrew A. Smith,** personnel superintendent of acetate rayon plant, will succeed Dr. Swank. **Edward M. Epstein,** technical superintendent of rayon plant at Richmond plant at Richmond, Va., is being transferred to rayon plant at Old Hickory, Tenn., in same capacity, succeeding **Dr. Carey M. Swann. Dr. Rolin Conway** succeeds Mr. Epstein at Richmond. **Frederick M. Acker,** manufacturing superintendent of rayon plant at Richmond has become plant manager of Yerkes rayon plant, Buffalo, succeeding **Donald A. Miller. Mr. Worthington, Mr. Miller** and **Dr. Swann** have been placed on special assignments.

CHARLES E. RODGERS has been named manager of staple-fiber division, Celanese Corp. of America, Narrows, Va., succeeding the late Robert G. Dort.

Wylls Taylor, former president of Newnan Cotton Mills, Newnan, Ga., has become associated with Barnes Textile Associates, Boston, Mass., in its Southern operation.

W. B. Thomas, general superintendent of Mooresville Mills, Mooresville, N. C., has left that company.

Bennie Ward has become assistant superintendent of plant of A. D. Juilliard & Co., Inc., Stottville, N. Y.

William C. Waring, Jr., lately member of a Providence law firm, has been appointed assistant to president of Textron, Inc. Mr. Waring will be located in company executive offices in Providence, R. I.

J. Charles Windham, former assistant superintendent of Pinkney plants of Textiles, Inc., Gastonia, N. C., has been named superintendent.

R. Kenneth Winters has been named comptroller of Airmaid Hosiery Mills, Dallas, Tex. **E. J. Colwell** has been named auditor.

Sanford P. Young, lately with Dan River Mills and previously with chemical companies, has joined Joseph Bancroft & Sons Co., Wilmington, Del., in its textile-finishes development Department. He will be located at Greensboro, N. C.

OBITUARY

CHARLES H. CLARK, 83, a former editor-in-chief of TEXTILE WORLD, died in November. Active in editorial work on textile papers for many years, Mr. Clark served as editor of *Textile Manufacturers Journal* from 1908 until 1916, when the publication was taken over by Bragdon, Lord & Nagle Co., Inc., and consolidated with *Textile World Record* to form TEXTILE WORLD. He remained as editor of this publication until 1930. The promoter of the United States Institute for Textile Research, Mr. Clark was an active participant in furthering the cause of technical research for the textile industry, and it is with deep regret that we note his passing.

Robert L. Anthony, 72, former president of the Rhode Island Textile Assn., and secretary of Fruit of the Loom, Inc., Pontiac, R. I., died recently.

George W. Babcock, Sr., 71, president and one of the founders of Puritan Cordage Mills, Louisville, Ky., died recently.

Thomas Brindle, 85, founder of Brindle Bros. Webbing Co., Woonsocket, and Warwick Textile Co., Cranston, R. I., died recently. A specialist in the weaving of bandings, Mr. Brindle has been associated for some years with Hope Webbing Co., Providence, R. I.

William A. Brownlee, 53, former president of Appalachian Mills Co., Knoxville, Tenn., died recently. He had been elected chairman of the board of Appalachian in October of 1950.

T. J. Carpenter, 99, one of the founders of Canton Cotton Mills, Canton, Ga., died recently.

C. Walker Jones, 76, president of C. Walker Jones Co., Philadelphia, Pa., died recently. He had been active in the knitting trade for 50 years.

Andrew G. Pierce, 86, president of American Woolen Co., New York, from 1925 to 1930, and later president of Pierce Bros. Ltd., New Bedford, Mass., and Consolidated Textile Corp., New York, died recently.

Harlan F. Brown, 59, part owner, vice president, and supervisor of operations of Theme Hosiery Co., Los Angeles, Calif., died recently. He was formerly associated with Berkshire Knitting Mills, Reading, Pa.

Charles E. Cook, retired secretary and assistant treasurer of Saco-Lowell Shops, Boston, Mass., died recently. At the time of his death, he was vice president and a director of Appleton Co., Anderson, S. C.

Joseph Ryan, 45, vice president of John J. Ryan and Sons, Greenville, S. C., died recently.

Howard B. Snader, 64, executive vice president of Vanity Fair Mills, Reading, Pa., died recently. He was prominent as a developer and inventor of equipment used in knitting silk underwear and hosiery.

Paul W. Bristow, 53, research engineer in charge of one of the Komet development departments, Scott & Williams, Inc., Laconia, N. H., died recently.

S. W. Cunningham, sales manager for U. S. Gutta Percha Paint Co., Providence, R. I., died recently.

William C. Fackler, 57, director of sales and merchandise research of Munsingwear, Inc., Minneapolis, Minn., died recently.

Frank C. Hewitt, 50, general manager of Windsor Print Works, unit of Consolidated Textile Corp., North Adams, Mass., died recently.

John W. Bentley, 87, retired general foreman for Crabtree Mills, Newburgh, N. Y., and superintendent of Woonsocket Worsted Co., Woonsocket, R. I., died recently.

Aaron H. Bradley, 78, superintendent for the past 38 years of Crystal Springs Cotton Mill, Chickamauga, Ga., died recently after a long illness.

Herman Reiff, 81, former superintendent for Alexander Smith & Sons Carpet Co., Yonkers, N. Y., died recently.

Herbert C. Craft, 39, production foreman at U. S. Rubber Co., Scottsville, Va., plant, died recently.

moisture content measured *on the spot*

by the new

LOW PRICED KEARNY *Midget* PSYCHRO-METER

Especially designed for *practical spot checking* of moisture in all phases of the textile industry.

Suitable for Cotton, Wool, Worsted, Rayon, Mixtures and other Textiles, or raw materials, yarns and fabrics.

Accurate within a tolerance of one-half of one percent.

LET US SHOW YOU HOW

Ask for Free Demonstration

KMC KEARNY MANUFACTURING CO., INC.
Kearny, N. J. — Greenville, S. C.
Authorized agents all over the world

FRICTION FIGHTER

(Flyweight Division) MPB miniature ball bearings provide the answer to problems with new designs concerning space-weight-friction. Smallest in size, foremost in rugged performance. Install and forget.

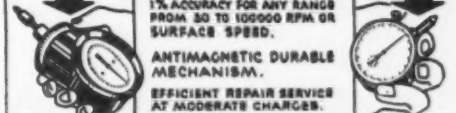
Over 70 different types and sizes from .100" to 5 16" o.d. Complete engineering service—full specifications in our new catalog. Write or wire for TR51, no obligation.

MINIATURE *Precision* BEARINGS
Incorporated KEENE, NEW HAMPSHIRE, U. S. A.

WHEN ACCURACY COUNTS... *Contact* SCHERR!

CONTROL MAXIMUM PRODUCTION WITH...

G.S. HAND TACHOMETERS AND SPEED INDICATORS



1% ACCURACY FOR ANY RANGE FROM 30 TO 100000 RPM OR SURFACE SPEED.

ANTIMAGNETIC DURABLE MECHANISM.

EFFICIENT REPAIR SERVICE AT MODERATE CHARGES.

IDEAL FOR MOTORS - SHAFTS - SPINDLES - LOOMS - TURBINES FOR TEXTILE AND POWER PLANTS

WRITE FOR ILLUSTRATED FOLDER

GEO. SCHERR CO., INC. • 200 F Lafayette St., N. Y. 12

"But you can't buy that kind of a motor..."

• How many times have you heard somebody that ought to know better say something like that about motors, pumps, compressors or what-have-you? And how many times have you heard somebody else say, "Oh yes you can! I saw just what we need in Blank Company's ad yesterday."

Advertising pages in this magazine are packed with *news* about your business. They contain information about products and services designed to help *you* do your job quicker, better and cheaper.

To be well-informed about the latest developments in *your* business, *your* industry... and to stay well-informed... *read all the ads too.*

McGRAW-HILL
PUBLICATIONS

Pin-Tenter Technique

(Continued from page 115)

Light Wool Fabrics

Most pure-wool goods have already been fulled to size and therefore only require to be finished without change of dimensions. The overfeed and entering arrangements are very useful here. Cotton-and-wool mixtures generally require overfeed for stability and are handled much as spun rayons.

Tricot Fabrics

One of the outstanding features of the modern pin frame is its ability to handle tricot fabrics automatically and with greater accuracy on the selvages than has hitherto been obtained. The selvages are completely uncurled and pinned close to the edge (see illustration). The dimensional control afforded by the pin frame is of great advantage in finishing these fabrics. Acetate and nylon tricots can be run automatically just as fast as they will dry, which is a great advantage; and both width and gain can be adjusted at will.

The entering arrangements for these fabrics are somewhat different from those employed for woven cloths. The entering frame with driven rollers and opening scrolls is of great assistance, as it brings the cloth out to a suitable width, enables the correct tension to be applied, and goes a long way towards eliminating the selvage curl.

The final uncurling of the selvage is done close up to the guiders, whichever type is used, by a special arrangement which lays the selvage quite flat at the entrance to the guider. The uncurling can be done at any speed of running. It can be seen that really accurate guiding and pinning of tricot results in a considerable saving of fabric, and the high speed of operation likewise leads to economical finishing.

Nylon Setting

Recent developments in nylon setting have led to the use of pin-tenter frames, particularly on nylon-tricot and -lace fabrics. This use is an extension of the experience already gained on tricot and requires a nylon-setting tenter, shorter than the usual finishing tenter, with special heating devices to enable temperatures of about 420° F. to be reached. The accuracy and adaptability of dimensional control obtainable on the pin frame is most desirable in nylon setting.

SEARCHLIGHT SECTION

(Classified Advertising)

EMPLOYMENT: BUSINESS: "OPPORTUNITIES" :EQUIPMENT :USED OR RESALE

RATES

UNDISPLAYED

$1.20 per line, minimum 4 lines. To figure payment count 5 average words as a line.

INDIVIDUAL EMPLOYMENT WANTED undisplayed advertising rate is one-half of above rate, payable in advance.

Box Numbers—count as one line.

Discount of 10% if full payment is made in advance for 4 consecutive insertions.

DISPLAYED

Individual Spaces with border rules for prominent display of advertisements.

The advertising rate is $10.40 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

An advertising inch is measured ⅛" vertically on one column, 3 columns—30 inches—to a page.

T.W.

NEW ADVERTISEMENTS received by January 17th will appear in the February issue subject to limitations of space available.

PROJECT ENGINEER

Expd viscose engineer

to supervise design of viscose filament and staple plant.

SOME TRAVEL

$8,000-$10,000

Box TW1199,
221 W 41 St, New York 18, N. Y.

ASSISTANT SUPERINTENDENT

For asbestos textile mill. Textile graduate with practical textile experience. Opportunity to become established with progressive, growing organization. Submit resume.

P-8248, Textile World
330 W. 42nd St., New York 18, N. Y.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (18)
CHICAGO: 550 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

CHEMIST, PH.D. in organic or physical chemistry with experience in synthetic textile fibers such as polymerization, fiber processing, and techniques for evaluation. Laboratories in Philadelphia area. Please give resume of training, experience, and salary requested. P-8291, Textile World.

YOUNG MAN wanted for Throwster's Quality Control Laboratory. Write giving complete details as to age, education and experience. Answers will be held in confidence. P-8300, Textile World.

MAN DESIRED to supervise and take charge of Kier Bleaching of cotton knit goods. Mill at North Carolina. Lesavoy Industries, 350 5 Ave., Suite 6800, N. Y., 1, N. Y.

ADDITIONAL EMPLOYMENT ADVERTISING
Continued on page 268

MEN WANTED
POSITIONS OPEN

We can place: MANAGERS, supts. and asst. supts. worsted yarn mills; manager full fash. hos. dyeing and finishing; supt. yarn singeing and mercerizing. (Sc. Am.); woolen cloth mill supts.; managers and supts. rayon-cotton mills; supt. narrow fabric mill; supt. and designer jacquard fabrics; woolen yarn supt.; supt. full fash. hos. mill; night supt. rayon dye. and fin. plant; night supt. woolen mill; expert jacquard designer, selling house in New York City.

OVERSEERS FOR FOLLOWING DEPTS.: package dyeing; tenter frames; worsted spinning; rayon-cotton winding, warping and slashing; rayon weaving; sponging, shrinking and examining; dyeing rayon and cotton piece goods, $100 to $175 wk.; woolen weaving jacquards and box looms; worsted twisting, winding, doubling, weaving; cotton carding; narrow fabric finishing; worsted finishing; sewing knitted fabrics.

SECOND HANDS FOLLOWING DEPTS.: woolen weaving; woolen and worsted finishing; worsted combing; woolen-worsted weaving; cotton rayon weaving; and section hand worsted spinning.

SALESMEN for leather products, chemicals and textile machinery; asst. production man, sweaters; industrial engineers; chemists and chemical engineers $4,000-$8,000; laboratory assistants.

MECHANICAL and ELECTRICAL ENGINEERS: woolen mill master mechanics; cloth examiners; Komet mech. fixer; full fash. hos. mech. fixer; woolen-worsted-rayon loom fixers; creator French type worsted combs.; Draper loom fixer; expert jacquard loom fixer; beamer tender; quiller tender; fixer-foreman Wilton Brussels looms; narrow fabric loom fixers.

LIST YOUR CONFIDENTIAL APPLICATION WITH US

We will keep you informed of attractive positions open in the textile mills.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St. Boston, Mass.
Telephone Liberty 2-6547
SPECIALISTS IN PLACING TEXTILE MILL EXECUTIVES

KNITTED FABRICS PLANT SUPERINTENDENT

Established manufacturer of woolens and cottons seeks capable executive with proven ability in production planning and cost control. Must be experienced in styling and manufacture. Submit complete resume of experience and salary requirements. Replies confidential.

P-8414, Textile World
330 W. 42 St., New York 18, N. Y.

WANTED

TEXTILE TECHNOLOGIST

TEXTILE TECHNOLOGIST with academic background in chemical or mechanical engineering, or physical chemistry, and with theoretical knowledge and industrial experience pertaining to physical and mechanical aspects of textile yarn and fabrics construction from natural and synthetic fibers and filaments. Excellent opportunity in industrial research for top flight man.

CHEMICAL ENGINEER—Young man with some knowledge of textiles or with textile schooling plus additional engineering training required for research work.

New Jersey Location. Please give complete information regarding professional qualifications, work experience and salary requirements in first letter together with recent photograph or snapshot.

P-8437, Textile World
330 W. 42 St., New York 18, N. Y.

Mechanical Engineer

with machine design

National organization seeks man under 40. M.E. degree, with experience as project engineer or designer of general machinery, preferably in textiles. Must have ability to supervise and coordinate human relations as well as specific inventive ability on technical level. Must be willing to travel. Duties include research on development of machinery supervision of design and installation.

Excellent salary and future. Send complete resume and salary required.

Box 1198, 221 W. 41 St.
New York 18, N. Y.

DYER WANTED

New modern plant in North Carolina has opening for a dyer with experience on Viscose and Acetate piece goods. State age, education, experience and salary desired.

P-6237, Textile World
330 W. 42nd St., New York 18, N. Y.

Plant chemist required for dyeing and finishing plant

located in the South. Must be fully qualified to handle laboratory and operating problems on dyeing and finishing of synthetic woven fabrics, including nylon, acetate, viscose, and blends. Must have a thorough knowledge of shade matching on becks, jigs, and continuous dyeing.

P-7500, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

SUPERINTENDENT

On Jacquard Narrow Fabric Looms. Wide Experience

P-8547, Textile World
330 W. 42 st., New York 18, N. Y.

(Continued from page 267)

POSITIONS WANTED

RAYON AND Silk Throwster, with broad experience seeks employment as Superintendent of Throwing Plant, or assistant. PW-7670, Textile World.

THROWSTER RAYON, silk and nylon—wide experience in all phases of throwing—rayon and silk crepes—hosiery yarn and all types of rayon twists—desires position as production supt. Employed. Ref. PW-8370, Textile World.

SAMPLE WEAVER with ten years experience on wool material desires steady position. (Jacquard Machine). PW-8542, Textile World.

BUSINESS OPPORTUNITIES

For Sale. Small dye house, doing rugs, garments, and sample piece goods. Includes buildings and equipment. An excellent opportunity for a good dyer who has a limited amount of cash for investment. Write Miami Dye Works, 292 N.W. 54th St., Miami, Fla.

Ribbon Mill—

24% ownership for sale. Up to date machinery. Established business. New Jersey site. BO-8423, Textile World.

SPECIAL SERVICE

The Master Loom Service, has a new double action automatic Let-Off for all Looms, also an expert on tri-color-mixers available. Master Loom Service, 604 Oak Ave., Fairlawn, N. J.

WANTED

Anything within reason that is wanted in the field served by Textile World can be quickly located through bringing it to the attention of thousands of men whose interest is assured because this is the business paper they read.

STOCK READY FOR IMMEDIATE DELIVERY

24—Dobson & Barlow 40" Cards, 27" doffers, 10" coilers
7—Saco-Pettee Roller Top Cards, 27" doffers, 12" coilers (Changed over 1946)
7—Nasmith Combers, 12" lap, 1925 Model

5 M SPINDLE CARDED YARN MILL MACHINERY ONLY

. . . Partial Listing—Let us know your needs . . .

WILSON LEWITH MACHINERY CORP.

Post Office Box 4100
CHARLOTTE, N. C.
Phone 4-2403
Warehouse: Wilkinson Blvd.
Behind Barbeque Lodge

WANTED

By Mill in Philadelphia area with 18—82" box and 6 automatic looms.

COMMISSION WEAVING

CW-8508, Textile World
330 W. 42 St., New York 18, N. Y.

WANTED

Large engineering firm wishes to acquire several complete textile plants through purchase of (1) capital stock, (2) assets, (3) machinery and equipment, whole or in part. Personnel retained where possible, strictest confidence.

Box 1222
1474 Broadway New York 18, N. Y.

GENERAL MACHINE WORK

- Precision hole drilling from .002 up
- Small precision parts
- 10 and 20 ton punch press work
- Spinning Rings Reground, spot regrooved and Polished

E. W. KOCH
220 Arch St. Cumberland, Md.
Phone 983-M

Without obligation send for folders containing information on humidification or dehumidification, also on humidity indicators and recorders

HUMIDITY

Is Our Business—And We Know Our Business

ABBEON SUPPLY CO.
58-10 41 Drive, Woodside, N. Y.

NYLON YARNS

Bought—Sold—Traded

THE YARN EXCHANGE INC.
450-7th Ave., N. Y. LA 4-5536

PROFESSIONAL SERVICES

WANTED

(Additional Wanted Ads on page 277)

LANCASTER, ALLWINE & ROMMEL

Registered Patent Attorneys

Patent Practice before U. S. Patent Office. Validity and Infringement Investigations and Opinions. Domain and form of Evidence of Conception forwarded upon request.

Suite 446, 815 15th St., N. W., Washington 5, D. C.

WANTED - CHEMICALS

Dyes—Colors—Pigments
By-Products—Wastes—Equipment
Oils—Waxes—Drugs

CHEMICAL SERVICE CORP.
80-10 Beaver St. New York 5, N. Y.

McKOY-HELGERSON CO.
Industrial Construction
Greenville, South Carolina

KAMINER-HELGERSON CO.
Industrial Piping
Greenville, South Carolina

DYESTUFFS

Will buy your surplus and obsolete dyes and chemicals for cash.

NEW ENGLAND PRODUCTS CO.
91 Oliver St. Boston, Mass.

EATON & BELL

Patent Attorneys

1208 Johnston Bldg., Charlotte, N. C.

753 Munsey Bldg., Washington, D. C.

WANTED FOR EXPORT

6 to 8 Color Print Machine 46 to 52 inches wide. Complete.
2 Pantographs, 50-60 inches wide.
1 Complete Flock Printing Plant, small or medium size.

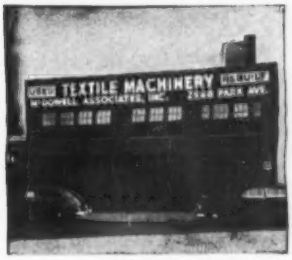
All in Perfect Operating Condition
W-8303, Textile World
330 W. 42 St., New York 18, N. Y.

Somebody—Somewhere,

needs your idle equipment! Reach that buyer quickly and economically thru the

"SEARCHLIGHT SECTION"

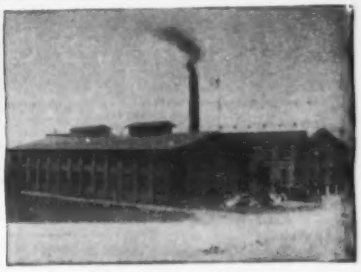
The meeting place of Used Equipment Buyers and Sellers



Executive Offices and New York Warehouse

McDOWELL ASSOCIATES INC.

FOR SALE



Hudson, New York Warehouse

PARTIAL LIST - - - IMMEDIATE DELIVERY

CARDING, SPINNING AND WEAVING EQUIPMENT

6 Ruf BALLING MACHINES, 18 spindles each
2 Worcester WARP COMPRESSOR BEAMERS, 1947 Model, with 2400 spindle Creels
22 D. & B. COTTON CARDS, with Abington Stripper attachments
1 D. & F. Iron FINISHER CYLINDER, 60" x 54" dia.
1 D. & F. new single cyl. Iron CARD, 60" x 60"
2 J. Smith NOBLE COMBS, New, 68" rack
4 Whitin Model H COMBERS, 6 heads, Roth aspirators
2 P. & S. CEILING CONDENSERS, 38" screen with fans
3 P. & S. DRAW BOXES, 8, 10 and 12 spindles
1 Sargent RAG DUSTER, 1936 Model, like new
1 Hunter GARNETT, 2 cyl. 60"
1 Split Can GILL BOX, single head
4 GILL BOXES, 2 spindles, intersecting
50 C. & K. LOOMS, 2x1 box, 52" reed, rebuilt
200 DRAPER E LOOMS, 56" dobbies, mtrzd.
12 C. & K. VERI-BEST LOOMS, ball bearing, 82", 4x1 auto. 25 harness, mtrzd.
8 C. & K. LOOMS, 1933 Model, 92" auto. 4x1, 25 harness, mtrzd.
2 C. & K. PLUSH LOOMS, double shuttle, 66", 20 harness, mtrzd.
8 D. & F. MULES, 1946 Model, 360 spindles each, 2½" ga.
1 S. & L. SHODDY PICKER, 22" x 40" dia. cyl.
1 Schofield SHODDY PICKER, 20" x 30" dia.
1 D. & F. MIXING PICKER, 30" x 24" dia., 12 bar
1 S. L. ROVING FRAME, 1937 Model, 152 spndles., 9x4 L.D.
1 Cameron Model 5 SPLITTER, 1949 Model, 62"
3 Whitin WOOL SPINNING FRAMES, 66 spndls. ea., 4" ring
2 D. & F. WOOL SPINNING FRAMES, Model E, age 1943, 6½" ga.
21 Whitin SPINNING FRAMES, 3¼" ga., tape drive, rebuilt
8 Whitin Model A WOOL SPINNING FRAMES, 100 spndles. ea., 4" ga., mtrzd.
10 F. & J. TWISTERS, 132 spndles. ea., tape drive, 4½" ring
2 S. L. TWISTERS, 200 spndls. ea., 2½" ring
1 D. & F. TWISTER, 200 spndls., 2½" ring, half equipped for novelty yarns
2 D. & F. WARP REELS, 82", hack stand, beamer, compressors, etc.
1 Cocker WARPER 54", with 800 end magazine creel
1 S. L. High Speed WARPER 54"
1 Cocker TRICOT WARPER, 1946 Model, 45"
1 Foster Model 102 CONE WINDER, 80 spindles
1 Lazenby COP WINDER, 1941 Model, 30 spindles
4 Abbott CONE WINDERS, Model 64, 80 spindles each

DYEING AND FINISHING

1 Van Dorn 5 drum SETTING AND BOIL-OFF MACHINE, 66"
1 P. & W. B.B. DESPECKER, 90", 3 Beaters, 3 wire brushes
1 Haubold CALENDER, 4 roll, 112", screw and lever set, mtrzd.
1 P. & W. SEMI-DECATUR, 72" x 12" dia. cyl., new blanket, pump and motors
1 Philadelphia Machine Company revolving stick LOOP DRYER, rebuilt, housing 48' long, poles 80" wide
1 P. & S. revolving stick LOOP DRYER, rebuilt, poles 80" wide
1 Philadelphia Machine Company PIN TENTER DRYER, 72", 6 pass unit
1 Sargent RAW STOCK DRYER, capacity, 1700 lbs. per hour, with Model N Feeder
1 Obermaier C.I. PACKAGE DYEING UNIT, 100 lb., 22 spindles
3 Scribner S.S. RAW STOCK DYEING MACHINES, capacity 500 to 600 lbs. ea.
1 MERCERIZING UNIT, 4 compartment tank, two 2 roll and one 3 roll Padders
1 S. D. SKEIN MERCERIZING UNIT, 24 poles, 54" skeins
1 Werner PADDER, new, 3 roll, 70"
1 Textile Finishing Company PRINT MACHINE, 2 color, 45", with blanket, washer and 12—50" copper Dry Cans
1 McNaught WOOL SCOURING RANGE, 4 bowl, 28" wide, with P. & S. 1933 Model DRYER
1 Arlington SCUTCHER, 72" beaters and scroll rolls, mtrzd.
1 Schoenherr HOT AIR SLASHER, box 15' long x 8' 2" wide, air fin steam coils
1 SQUEEZE SET, 2 roll, 72", pneumatic pressure, S.S. pan
1 SQUEEZE SET, 2 roll, 50", S.S. pan with S.S. Dry Can overhead
1 SQUEEZE SET, 2 roll, 62" copper pan with S. S. Dry Can overhead
1 SQUEEZE SET, 2 roll, 68", S.S. pan
1 Morrison CLIP TENTER FRAME, 20' long x 64" wide, S.S. clips and inserts
1 VAN VLAAN, CLIP TENTER FRAME, 40' long x 52" wide, S.S. clips and inserts
1 Butterworth TENTER FRAME, 50' long x 80" wide, with S.S. plates and inserts
1 PIN TENTER FRAME 50' long x 70" width, 3 roll, brass pin plates

REBUILT AND GUARANTEED

2 Werner BURLING AND EXAMINING MACHINES, 93½" wide, mtrzd.
1 Parks & Woolson Combination OPEN ROLLING AND DOUBLING MACHINE, 68"
1 Gessner VACUUM EXTRACTOR, 66", Nash Pump, motors, etc. with Gessner Scutcher 80", motor driven
1 STARCH MANGLE, 2 roll, 56"
1 Gerry LUMPER, 48" x 18" dia. cyl.
1 P. & W. MEASURING MACHINE, AWC Model 66"
1 D. & F. KNIT GOODS NAPPER, 20 roll, 80"
1 D. & F. D.A. NAPPER, 24 roll, 80"
1 Gessner D.A. NAPPER, 18 roll, 80"
1 Woonsocket D.A. NAPPER, B.B. 24 roll, 86"
1 D. & F. D.A. NAPPER, 24 roll, 86"
1 Parkhurst BURR PICKER, 24"
1 Sargent BURR PICKER 36"
1 D. & F. Iron FEARNAUGHT PICKER 48" x 48"
1 C. & M. FEARNAUGHT PICKER, 48" x 48"
1 Voelker ROTARY STEAM PRESS, 86"
5 Birch Coronation Rotary Foot Power SEWING MACHINES
1 P. & W. SHEARING MACHINE, 4 blade, B.B. revolvers, 60" cut
1 C. & M. SHEAR, single blade 66½", list savers
2 P. & W. SHEARS, Model B, double blade, 66½"
2 C. & M. SHEARS, double blade 66½" list savers
1 C. & M. Tacking Machine, 90", Singer Head

McDOWELL ASSOCIATES, Inc.
2568 Park Avenue Bronx 51, New York
Tel., MElrose 5-6741

. . WE OWN AND OFFER FOR SALE . .

SPECIALISTS IN REBUILDING & RECONDITIONING LOOMS

24—60" REEDSPACE C&K 4 x 1 LOOMS, 20 HARNESS DOBBY, SIDE CENTER FILLING MOTION, PLAIN BEARING, 2 SHIFT PICK COUNTERS, INDIVIDUALLY MOTOR DRIVEN.

1—30 Spindle Lasenby Model D-Jr. Cop Winder. Machine was installed in 1945. It is built with Roller Trumpets. Spindles to wind paper ribbon on cops 1½" dia. x 10".

C&K 2x1 54" Reedspace COMPLETELY REBUILT LOOMS, Roller Bearing, shock absorber, heavy bar individually motor driven, 20 harness dobby.

34—80½" Reedspace Draper Automatic Quill Change, Double Drive Looms, individually motor driven, worm take-up, some equipped with 600 hook double lift Jacquard Machines.

13—C&K 2x1 50" Reedspace, oversize shuttle box, individually motor driven, 20 hook double index dobbys, 2 shift pick clocks, 1½ Beams per loom.

32—C&K 2x1 52" Reedspace, oversize shuttle box, individually motor driven, 20 hook double index dobbys, 2 shift pick clocks, 1½ Beams per loom.

13—C&K 4x1 52" Reedspace Looms, individually motor driven, 20 hook dobby, pick clocks.

1—C&K 624 hook French Index, double cylinder, double lift Jacquard Machine.

1—High Column Ribbon Loom 15'8" long. ⅓ H.P., ½ H.P., ¾ H.P., 1 H.P., New and Used Textile Motors.

C&K 4x1 54" Reedspace COMPLETELY REBUILT LOOMS, with multiplier, roller bearing, shock absorber, heavy bar individually motor driven, 20 harness dobby.

9—54" Reedspace C&K 4x4 Looms, with 1⅛" shuttle box, 20 harness dobby, double index dobby single multiplier, plain bearings, 2 shift pick counter, motor driven.

2—56" Reedspace C&K 4x4 Looms, with 1⅛" shuttle box, 25 harness dobby double multiplier, plain bearing, 2 shift pick counters, motor driven.

24—60" Reedspace C&K plain looms, 20 harness double index dobby, plain bearings, 2 shift pick counters, motor driven.

5—C&K Heavy Wool type 2x2 Looms, 66" between layswords with 1½" x 2¼" shuttle boxes, individually motor driven and extended bottom shaft to operate Jacquard Machine.

20—#90 Universal Quillers and Coppers with and without bunchbuilders, excellent condition.

4—Measuring Machines 40" to 60" goods.

8 Yard Sipp Warpers 83" and 72".

Skein Winders, 60, 80, 100 Spindles.

COMPLETE PLANTS AND REAL ESTATE BOUGHT, LIQUIDATED AND APPRAISED

Paterson Textile Machinery Exchange
INC.
formerly the Paterson Silk Machinery Exchange, Inc.
22 SPRUCE ST. SHerwood 2-1363-4-5-6 PATERSON 2, N. J.

UNIVERSAL WINDERS

REBUILT **GUARANTEED**

ALSO FOR SALE

Foster Model #12 Winders
Foster Model #75 Winders
Luther Thread Dressers
1—Rebuilt Scott Model DH Tester

Your inquiries and offerings invited

GAINES TEXTILE MACHINERY CO. INC.
Dealers in Rebuilt and Guaranteed
Yarn Winding and Spinning Machinery
141-45 WEST 17TH STREET NEW YORK 11, N. Y.

Size Viscosity

(Continued from page 126)

pend upon the type of roll covering and the pressures applied. Pressure regulators are available for applying uniform pressures to the warps, and normal variations in the roll covering will not appreciably affect the size content.

The importance of maintaining the correct viscosity in sizing solutions has long been recognized in the industry. Many mills in the past have endeavored to control their sizing by periodically removing samples for laboratory tests. This procedure is inadequate because laboratory viscosity measurements are subject to error because of time delay and changing conditions of temperature, agitation, and other factors influencing particular solutions. Furthermore, laboratory measurements are applicable only to the samples taken; and by the time the results are available, the viscosity of the solution in the actual sizing process may have further changed, too late to make effective corrections.

What Viscometer Does

Viscometers have been perfected for use on slashers for process control. Such instruments automatically measure the viscosity of the solutions in the actual process where they are used, and eliminate the necessity of removing samples for laboratory tests. As a result, accurate control of viscosity can be maintained under actual operating conditions.

The measuring element of one type of viscometer that is in use in the industry is shown in the accompanying photograph as applied to a cotton slasher. In this partciular type, a plunger or piston is raised by a motor-cam mechanism and then allowed to drop by gravity. A sample of the solution whose viscosity is to be measured is drawn in through orifices as the piston is raised, and expelled when the piston is dropped. The time required for the piston to drop is a measure of the viscosity. This measurement is transmitted to a recorder through a suitable multi-conductor cable. Measurements are then converted into chart readings by means of motors, relays, and other associated parts. The recorder can be set to sound an alarm if high and low limits of viscosity are reached.

The viscometer records viscosity in convenient arbitrary units from 0 to 100. For such applications, it is not necessary to have the instrument calibrated into absolute viscosity units,

(Continued on page 272)

MACHINERY LIQUIDATING COMPANY

TYPICAL ⟨MLC⟩ ITEMS

READY FOR DELIVERY

ACT NOW—CERTIFIED VALUES

1—98" 2-cylinder Back Filling Machine
1—4 spindle Sargent Batter
1—47" 2-roll Batchers, with cut-off knive
1—68" Batcher
2—47" 2-roll Batchers, with cut-off knives
2—63" and 98" Batchers
1—Blower and Unit Heater motor driven
2—#0 Sturtevant Paddle Type Blowers
1—36" Saco Lowell Bale Breaker
1—56" Van Vlaanderen Button Breaker
1—62" 2-cylinder Bristle Brusher
1—72" 2-cylinder Curtis & Marble Brushing Machine
1—42" 2-roll Hydraulic Schreiner Calender, complete with pump, accumulator and motor
1—43" Kleinewefers 3-roll Calender
1—60" 4-roll Calender, 3 husk and one brass covered rolls
1—44" x 90" Davis & Furber 2-cylinder Shoddy Card
4—48"x60" D&F 3-cylinder all iron Cards
6—8-head Whitin D-2 Combers
1 Ribbon Lapper
1 Sliver Lapper
12—Whitin D-2 Combers 8 heads
2 Whitin Sliver Lappers
2 Whitin Ribbon Lappers
2—4-head Whitin Ribbon Laps
2—Whitin 4-head Ribbon Lappers
1—72" Hartman 4 bank Single Rub Tape Condenser
1—Saco Lowell Condenser
1—36" Chenille Cutting Machine with exhaust blower, dust collector, motorized (extra blade)
5—Curtis & Marble Reversible Flock Cutters
2—Stokes Fiber Cutters
1—63" Curtis & Marble Dewing Machine
1—60" P&W Doubling, Measuring and Boarding Machine
4—60 sp. Foster Model 25 Doublers, motor driven
12—Deliveries Whitin Drawing
16—Deliveries Saco Lowell Drawing
1—Set of 7—44" tinned iron Dry Cans, with vertical frame and coiling folder
1—Set of 9—50" tinned iron Dry Cans, with horizontal frame, Mycock expander, coiling folder.
1—Set of 38—109" Copper Dry Cans, motorized with motor and Reeves drive
1—Hurricane Class D, 3 fan, six section Loop Dryer
2—Hurricane Dryers to dry spring dyed packages of yarn
1—60 yd., 98" wire Heathcote Return Tenter Dryer
1—Philts. Pin Tenter Dryer, 44" to 71" opening
2—36" Gerry Waste Dusters
2—48" Van Vlaanderen S/S lined Dye Jiggers
3—50½" Werner S/S lined Dye Jiggers
2—50-60 lb. Smith Drum Rotary Dyeing Machines
2—500 lb. Hussong copper basket Raw Stock Dyeing Machines with air hoist
1—62 arm Twin Type Hydraulic (15 units) Buhlman Dyeing Machine Complete
1—King & Gerber Embosser
11—Tolhurst & Fletcher Extractors, 18", 28", 32", 40", 42", 48", 60"
1—60" Sargent Picker Feed
22—60" Bramwell Card Feeds
2—60" C&M Folders
1—Rodney Hunt M-3 2-string Fulling Mill
4—3 head Prince Smith open type Balling Head Gill Boxes
2—60" Hunter 3-cylinder Garnetts
2—60" Hunter 30" x 60" 3-cyl. Double Doffer Garnetts, with P&S Cone Willow
10—44½" to 53" Grinders
1—72" Furbush Card Grinder with stand
4—Foxwell Cloth Guiders
3—10" C&M Inspecting Tables
38—13" R.S. C&K 2x1 Automatic Looms, motor driven
16—48" C&K 2x1 Auto. Looms, 12 Harness, Motor driven
30—52" R.S. C&K 2x1 Silk Looms, 16 harness, motor driven
156—46", 50", 52" R.S. C&K Looms, 20 harness, Motor driven
72—52" R.S. C&K 8-3 2x1 Auto. Shuttle Changing Looms
2—52" R.S. C&K 4x6 Box Looms with Jacquards. Motor dr.
8—60" R.S. C&K 2x1 Auto. Looms, 8 harness Cam, motor driven
36—62" C&K 4x1 Looms, 28 harness, Motor dr.
48—52" C&K 2x1 Auto. Looms, 8 harness, intermediate head motor driven
8—100" C&K 2x2 Box Looms
6—110" C&K 4x4 Box Looms
4—110" C&K 4x1 Veribest Looms
45—37" R.S. Draper Mod. E Looms, Lacey Tops, belt dr.
43—42½" R.S. Draper Mod. E Looms, 4 harness spring tops
48—45" Draper Modified D Looms, 16 harness
2—45½" Draper Model E Looms with 2 harness roller tops
200—45½" R.S. Draper Model E Looms
286—46½" R.S. Draper Model E Looms: 246 with roller tops and 40 with 12 harness dobbies, all motor driven
87—47½" R.S. Draper Model E Looms, some equipped with roller tops and some with Lacey tops, all motor driven
19—50½" R.S. Draper Model E & D Looms, roller tops
30—62" R.S. Draper Modified D 2x1 Looms, 16 Harness, Motor driven
16—43" R.S. Stafford Automatic 16 harness dobby Looms, motorized
16—43" R.S. Stafford Automatic Cam Looms, motorized
123—49" R.S. Stafford Shuttle Change Dobby Looms
1—38" Schofield Lumper
2—42 x 44" Starch Mangle with tank
1—60" x 23" P&W AWC Measuring Machine
2—240 spindle J&B 1-⅞" gauge Mules
2—240 spindle J&B 2" gauge Mules
6—312 spindle J&B 2-⅛" gauge Mules
1—360 spindle D&F 1942 2⅛" gauge Giant Package Mule
5—66", 72", 80" Single and Double Acting Nappers
1—New 80" 36-roll Double Acting Napper
1—Dobson & Barlow Vertical Opener with Kitson Hopper Feeder, with extended apron
1—30" x 30" Mezzera Wool Opener
7—18", 56", 75" two and three roll Paddars
1—18" Butterworth Rag Picker B/B, motor driven
1—33" James Smith Mixing Picker, motor driven
1—36" Sargent Burr Picker
1—40" Saco Lowell 2-beater Breaker Picker
1—48" Sargent Duplex Burr Picker
1—48" C&M "Parkhurst" Double Burr Cyl. Picker
2—Bywater Polishing Machines
1—Bushnell Cloth Press
4—Skein Package Presses
1—52" Gessner Single Bed Apron Cloth Press
4—65" Gessner and Voelker Double Bed Cloth Presses
3—42" Textile 4-color Printing Machines
1—43-½" Rice, Barton & Fales 5-color Printing Machine
1—30 spindle Lindsay-Hyde Adjustable Skein Reels
4—60 spindle Saco Lowell 12x6 Roving Frames
1—27" x 48" Sargent Scouring Bowl
2—60" Parks & Woolson Single Blade Shears (one 8in tooth, one smooth tooth)
1—63" Shear with V-belt motor drive
5—(Approx.) 66½" Parks & Woolson Double Blade Shears
1—New 66½" C&M Type W Shear
1—76" Curtis & Marble Double Blade Shear
1—80½" Parks & Woolson Single Blade Shear
1—86" Parks & Woolson Model A Double Blade Shear
1—63" Textile 4-burner Gas Singer, 1925
1—72" Birch Bros. 4-burner Singeing Machine, equipped with Roto-Clone, 1946
1—Saco Lowell 1924, 5" and 7" cylinder Slasher
1—57½" Cotton Slasher, 5" and 7" cylinders, equipped with Brown Controls
1—42" 20 knife Ireland Slitting Machine
2—80 spindle Whitin 12x6 Slubbers
2—72 spindle Saco Lowell 11x5½ Slubbers
2—180 spindle Whitin Model A 3" ring Spinning Frames
2—120 spindle D&F Model E, 6½" Ope Spinning Frames
1—Worcester Warp Compressor Spooler
3—140 sp. Barber Colman Automatic Spoolers, Model KK, 1926
2—54" W&J 40' Tenter Frames, with brass top opening clips
1—60" Butterworth Clip Tenter Frame with top opening brass clips
1—76" Textile Finish, Machine Co. 148" wide Pin Tenter and Drying Frame
1—70" King & Gerber Tubing Machine
1—96" W&J 40' Tenter Frame with brass top opening clips
1—80 spindle Hopedale 4½" ring band driven Twister
1—144 spindle Whitin 4½" gauge, 3½" ring, band driven Twister
1—144 spindle H&B Twister, 6" gauge, 4½" ring, V-Belt drive.
4—180 spindle Draper 3½" gauge, 2½" ring, band driven Twisters
1—220 spindle, 2¼" ring, 3" gauge H&B band driven Twister
1—160 sp. Collins Twister, 3½" R. 5" Ga., 9" traverse
1—300 spindle D&F 1947 2½ gauge Giant Package Mule
3—290 spindle Fales & Jenks 2" ring Twisters
1—High Speed Barber Colman Warper Model HW, 1926
1—324" Entwistle High Speed Warper with 1000 end creel
3—82", 92", 98" Davis & Furber Warper, complete with compressor
2—8-string Hommer Wool Washers
24—20 spindle Universal #90 Winders
1—30 spindle Lazenby Jr. T model Cop Winder
1—40 spindle Foster Model 12 Tube Winder with skein attachments
2—48 spindle Easton & Burnham skein to spool Winders, motor driven
1—80 spindle Foster #102 Winder, 1945-8 model
17—80 spindle Sipp Skein Winders
1—80 spindle Foster skein to cone Winder
1—100 spindle Foster Model 12 cone Winder
7—100 spindle Foster Model 21-A Tube Winders
4—60 sp. Abbott Auto. Travelling Cone Winders, Model 64, motor driven
2—120 sp. Universal Roto-Coners, 1942

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Consisting of Two S/S Tru-Shade Dyeing Machines Stainless Steel Fulling Mill. Finishing Machine, Etc. All Late Type Equipment.

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COMPLETE NARROW FABRIC WEAVING MILL WITH 8 LOOMS. WINDER, QUILLER, WARPERS AND ALL SUPPLIES
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COMPLETE DRAPERY JACQUARD MILL WITH 24 LOOMS.
COMPLETE FLAX TOW GILL SPINNING UNIT.

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1—CALENDER—Embossing, 72", 2 Roll
3—ABBOTT Cone Winders, Auto. 80 Spindles Each
20—DOBSON BARLOW Cotton Cards, 40" Cyl. 27" Doffers, 10" Coiler
3—GILL BOXES—3 Head & Creels, non-intersecting
1—5 CAN RIBBON FINISHING MACHINE
200—LOOMS, Draper "C" 42"-44" Cloth
24—LOOMS, C&K Auto. 2x1 54" Gem
74—LOOMS, C&K S-S's—54"
30—LOOMS, C&K S-3—52" Cloth
18—LOOMS, C&K 62", 4x4 Box
20—LOOMS, C&K 82", 4x1
32—LOOMS, C&K, 54" Auto. Bobbin Changing Gem Heads, 2x1 Complete
20—LOOMS, C&K Auto. 45" Cloth W-2's, 4x1 Box, Intermediate Gem Head
18—LOOMS, C&K, 72" R.S. 4x4 Box
42—LOOMS, C&K, 54" R.S. S-S's, 2x1 Box
6—LOOMS, C&K, 16' RIBBON LOOMS complete with Harness 42" Silk Beams, 220 V Motor Double Deck
1—P&S 2 Bowl Wool Skein Scouring Machine
2—MULES D&F 336 Spindle—2¼ ga.
1—MULTIPLE Ribbon Blocking Machine Complete with overhead Let-Off Stand
1—40" SCUTCHER with Folder
1—4 BURNER Singer, 63", with Kemp Burners
1—SLASHER, Johnson 5 Drum 60" Wide
1—SLITTER, Multiple Circular Knives
6—WHITIN Tricot Knitters, 28 Ga. 168", 2 HP Mtr.
1—80" High Speed Saco Lowell WARPER
2—84" Sipp Eastwood Type DY WARPERS, 1941 High Speed, with variable speed control
1—92" D&F Pinless Warp Reel Unit

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1 S-L ReBeamer with creel stand.—1 C&M 60" Folder, 1 yd. fold.
2 Franklin Pkg. Dye Machines for 10" Franklin Springs, 600 pkgs.
10 Stafford auto. Shuttle Change Looms 60" with ¾ HP motors.
12 Draper Model D. Looms 84" R.S. 16 har. Gem Heads, 1 HP motors.

WANTED
Draper Model E 40" Looms.

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2—40' x 50" Tenter Frames, made by Winsor & Jerauld
3 and 5 Bowl Calenders, from 50" to 60"
4—Allen Kiers with Pumps and Heaters
Dry Cans—Copper, from 40" to 120", vertical or horizontal stands
Single or 2 Roll Batchers, from 50" to 100"
2—3 Color R. B. F. Printing Machines
Motors, all sizes, all voltages
34—Draper Model E Looms, 50" reed space, friction let-off, Regan stop motion, side fork (space for second), motorized ½ HP 220/440 volt 60 cycle. Pick counter for all looms, 1½ beams per loom. Midget feelers, Stafford thread cutters
8—Draper Looms, Model D, 65" reed space, 4 bank sliding bar stop motion, Roper let-off, side fork, roll top for plain weave, belt drive to tight and loose pulley, midget feelers
130 Looms, 92", 4 x 1 Automatic, C&K, M.D., electric stop motions, complete
36—Looms, 82", same as above
6000 Roving Cans, 10" x 36", beautiful condition, *special at 35¢ each.*

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PROVIDENCE, R. I.

(Continued from page 270)

because it is not feasible to compute the optimum value of viscosity to be used for any particular warp.

Selecting the Best Formula

The procedure normally used is to install the viscometer and make a few laboratory determinations of size pickup, noting the viscometer reading. Then determine the value of viscosity that will provide the desired pickup for the particular warp. The accompanying chart shows a relationship between size content and viscosity for a typical cotton mill. Points used in plotting this curve were obtained from making laboratory determinations of the size content, and plotting them against the corresponding viscometer readings as the viscosity changed because of the effect of condensate and normal agitation in the size box. For this application, a size content of from 8 to 9% was found to produce the best results, so that 55 was considered the optimum value of viscosity in this case.

The selection of the most suitable size formula depends upon the particular application, and should be left to technicians having experience and highly specialized knowledge of the process. A viscometer installed to measure continuously the viscosity of the warp size furnishes an automatic check on the preparation of the size and on variations in the chemical composition or moisture content of the raw materials used in the size formula. If, for example, a mistake is made in the quantities of the ingredients used in preparing the size, or if the cooking, level, and temperature controls are not all functioning properly, the viscometer reading will deviate from the desired value. The deviation indicates to the operator that a mistake has been made so that the troubles can be corrected before warps are improperly sized. The viscometer will likewise deviate from the desired value, giving an alarm, if the chemical composition or moisture content of the raw materials are not uniform, as may be the case with different shipments.

Answers to Textile Quiz

On page 234.

1. d. [TW, Nov., '50, p. 4]
2. c. [TW, Nov., '50, p. 108]
3. b. [TW, Nov., '50, p. 113]
4. c. [TW, Nov., '50, p. 120]
5. a. [TW, Nov., '50, p. 125]
6. a. [TW, Nov., '50, p. 136]
7. c. [TW, Nov., '50, p. 171]
8. a. [TW, Nov., '50, p. 175]
9. b. [TW, Oct., '50, p. 103]
10. c. [TW, Sept., '50, p. 104]

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1—Set of 8 Butterworth Stainless Steel Vertical Drying Cans, 50" face x 23" diameter.
1—Tolhurst 40" Extractor, V-belt motor drive, suspended type, M.D.
6—Prince Smith 200 sp. Spinning Frames, 4" cap, 1945 model.
3—Klauder-Weldon 60 and 28 stick Skein Dyers.
1—Hunter 48" Shredder, ball bearing.
2—Proctor & Schwartz 2-cylinder double doffer Garnetts.
1—60" Double Knife Coating Head, 60' Oven.
1—2-roll 60" Embosser, Levant Grain.
1—Hunter Stock Dryer, with conveyor and automatic feed.
1—Rice, Barton & Fales 8-color 60" Print Machine.
1—Rice, Barton & Fales 2-color 45" Print Machine.
110—UNIVERSAL #50 WINDERS, L DRIVE MOTOR DRIVEN NEW 1948-49.
1—Proctor & Schwartz Blamire Lapper.
1—Smith Drum Yarn Mercerizing Unit.
1—NEW Barry 61" Spreader, with Coils.
1—Textile Finishing Machine Co. 5 Bowl Heavy Duty Calendar, 54".
6—Rice, Barton & Fales 48" Dye Jiggs, completely stainless steel.
1—Tenter Frame, 30' long, 60" wide, Stainless Steel Clips.

1—Johnson & Bassett Mule, 312 spindles, 2" gauge.
1—Proctor & Schwartz automatic roller warp Dryer.
10—Crompton & Knowles 92" 4 x 1 automatic looms, M.D.
3—Saco-Lowell Twisters, 5½" gau, 4½" ring, tape drive.
1—Narrow Fabric Calendar and 3 cans, 18" face.
2—Logeman All Steel Hydraulic Presses.
3—Foster #30 Winders, with tube and cone attachments.
1—Cocker Warper, Drum Type.
1—Warp Compressor magazine Creel, 800 running ends, electric stop motion.
4—Whitin Spinning Frames, 3½" gau, long draft, M.D.
1—Hurricane 3-fan, 6 section Section Dryer.
1—Franklin Package Dyeing Machine.
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100M Flat Steel Heddles, 14".
1 Million Wire heddles with steel eye, 14".
50M Doupe heddles, 12".
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Large lot Narrow Fabric loom parts and weights

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1—50" x 60" Tenter-P. S. Housing with 4 Copper Cans, & Simpson Winder
1—3 Roll 80" Calender
1—3-Roll 54" Calender
1—50" Semi Decator, P. W. with Blanket
1—60" English Coating Head
1—66"-4 Burner Singer V. V. with Cooling Cylinders
1—52"-2 Roll Quetch—extra Roll
1—Morrow Sewing Machine
1—62" New Seamer
1—50" Morrison Padder
1—4 Roll 41" Calender K. & G.
1—72" Fletcher Extractor Rubber lined
1—48" & 1—26" Extractors Copper Baskets
1—60" E. & H. Flat Folder
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1—48" Hennekins Examining Mach.
1—60" Park Woolson Single Blade Shear

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70M 7" Paper Cops with Metal Feelers—Thin Lip.
90M Fibre HD. Winder Spools 3⅜" T. x 3" H.
50M 8¾" 3 Ring Auto. Bobbins Like New.
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4—S-L Intermediate Feeders, 45", 1930
44—Dobson & Barlow Cards, 40", 27" doffer
16—Whitin D-2 Combers, 8 heads
64—Whitin D-3 Combers, 8 heads
2—Kitson #4 Bale Breaker
60—del. Whitin Drawing, Model H, 12" coilers
10—Whitin Sliver Lappers, 20 ends
10—Whitin Ribbon Lappers, 4 and 6 heads
36—Whitin Spinning, 288 spdl, 3" ga. convent. draft
16—F&J Spinning, 216 spdls, 3" ga. Whitin L.D.
4—Whitin Spinning, 224 spdls, 3" ga. L.D.
8—Collins Twisters, 200 spdls, 3½" ga. tape drive
1—B-C auto. Spooler, Model KK, 140 spdls.
1—D&F Dreadnaught Shredder Picker, 1935

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1—Duplex Sanforizer
1—Perkins Hydraulic Calender, 50", 3 roll, 60 ton
1—Textile Tenter Frame, 60' long, 56" wide
1—Greige Washer, 6 tanks, w/14 dry cans
1—Textile Ager, 30' long, 50" wide, complete
1—Van Vlaanderen 50" scutcher
1—Foster Model #18, 60" Yarn Gasser
1—Van Vlaanderen Palmer, 60"x60"
1—Rice, Barton & Fales Print Machine, 8 colors, 64"
1—Rice, Barton & Fales Print Machine, 8 colors, 54"
1—Rice, Barton & Fales Print Machine, 7 colors, 45"
1—Rice, Barton & Fales Print Machine, 5 colors, 42"
1—Rice, Barton & Fales Print Machine, 4 colors, 64"
1—Rice, Barton & Fales Print Machine, 3 colors, 57"

MISCELLANEOUS

2—Cohoes 2 cyl. Slashers, 62", 5' & 7'
24—Universal #80 Winder, 20 spdls, bunch bldrs.
4—C&M Shearers, 50", double blade
6—Cloth Inspecting & Measuring Machines, 48"
1—Tricot Beam Warper, 42"
2—Sipp Winder, 100 spindles

LOOMS

130—C&K "Gingham" 4x1 auto. 40"
500—C&K "Cotton King" 4x1 auto. 40"
73—C&K S5, 2x1, 56" auto.
8—C&K W3, 110" 4x1
50—Draper, Modified D, 60" auto.
8—C&K C4, 55½" cloth, 4x1

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1—F. & S. 39" Ceiling Condenser
1—D. & F 48" Fearnaught Mixing Picker
2—D. & F. 6 bar mixing Pickers, 54", 48"
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1—Schofield 48" Carding Hair Picker
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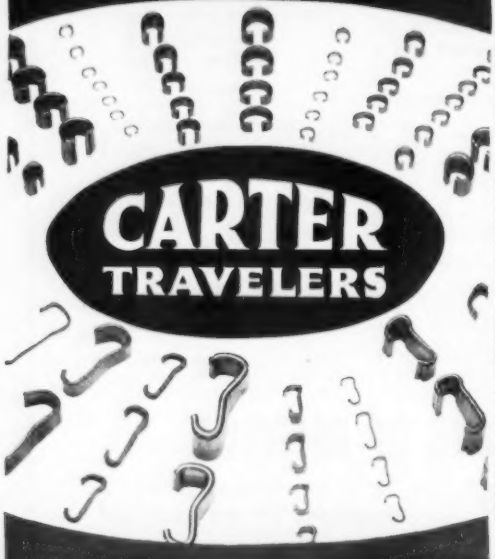

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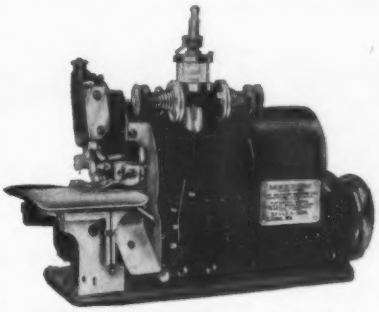

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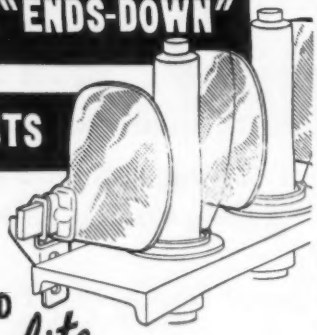

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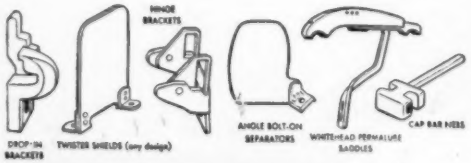
EACH JOB ENGINEERED—When ordering specify rail width, thickness of back flange, gauge and number of rings in each rail on one side only, as 24-22-22-22-24.

Only WHITEHEAD PERMALITE SHIELDS offer these advantages

- Fewer ends down: some mills report 27% less
- Use of lighter travelers which reduce power costs, wear of rings and travelers
- Solid polished blades (not slotted) which cause less wear on yarn, collect less lint and fly, resulting in smoother yarn
- Less vibration, wear of cams, worm gears and lifter-rod bearings
- Reduction of live weight—from as much as 300 lbs in old slotted steel shield assemblies to as little as 35 lbs per frame
- No attention after installation

OVER 4,000,000 IN USE BY MORE THAN 350 AMERICAN MILLS



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McBRIDE

TEXTILE EQUIPMENT NEWS

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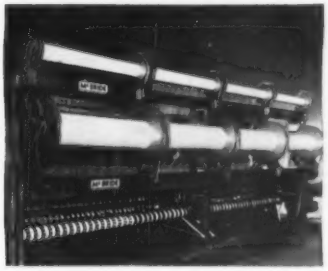
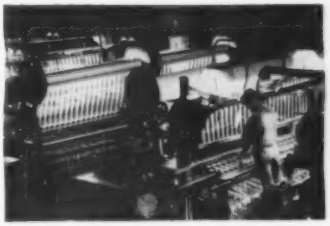
McBRIDE NARROW FABRIC LOOM BEAM INSTALLATIONS CUT COST AND IMPROVE PRODUCT QUALITY . . .

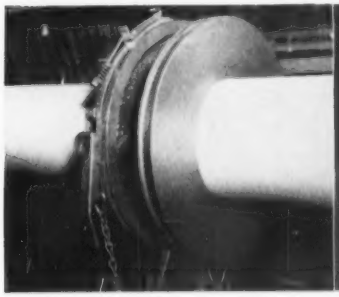




1. YOU SAVE the time and care of individual space tension adjustments because spools, hangers and weights are eliminated. **YOU SAVE** the down time of tying in short run spools. Beams are known to have runs of several months before replacement. **YOU SAVE** because McBRIDE LOOM BEAM INSTALLATIONS are made up of section beams that can be handled on normal width warping and slashing equipment.

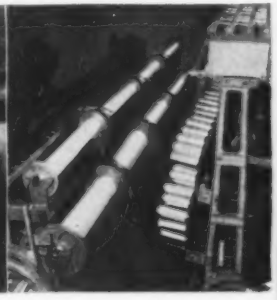
2. PRODUCT QUALITY IS GREATLY IMPROVED because tension on each space is uniform. Tension is controlled on each beam with individual brake bands with quick tension release which can be brought back to original position without readjustment. One pleased mill owner remarked, "Our former firsts now look like seconds. We've set a new quality standard with McBride loom beam installations. We have less down time, more production time with McBride narrow fabric loom beam installation."*

3. COMPLETELY ENGINEERED INSTALLATION tailored to your individual looms reduces installation time to the barest minimum. McBride beams and mountings are built as complete units that can be quickly bolted in place on your looms.



(a)

(b)



(c)

a. Close up of brake band shows ease of adjustment when necessary as beam runs down.

b. Detail of the McBride open end bearing and adjustable flange. (Optional) The completely machined open journal pocket is designed for easy loading of the full beam without danger of injuring the warp. These bearing stands are all machined in jigs, assuring perfect beam alignment clear across the loom.

c. Note how the McBride loom beam installation compares to the old top castle that it replaces. Great savings in down time and labor in tying up ends because of accessibility are realized in addition to improved product quality.

These looms may be placed back to back leaving a small aisle for handling the warp beams. On old installations, you gain the advantage of neat, clear aisles; and on new installations, you can gain floor space with the use of McBride section beams.

**name on request*

CREELS *for every purpose,* WARP BEAMS • FLANGES • ROLLS **McBRIDE**

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and so does your yarn when you use TEXACO STAZON

You can count on cleaner yarn when you lubricate saddles, top rolls, roll stands and shell-roll mandrels with *Texaco Stazon*—the lubricant that *stays on* the bearing surfaces and doesn't creep. *Texaco Stazon* is fluid for easy squirt-can application . . . feeds properly through both "wicked" and wickless saddles . . . and will not form gummy deposits.

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To assure longer life for high-speed, grease-lubricated ball and roller bearings, lubricate them with *Texaco Regal Starfak*. Its high resistance to oxidation, gum formation, separation and leakage assures smoother operation, lower maintenance costs.

You can get Texaco lubricants to step up the performance and step down the maintenance costs of *all* your machinery. Let a Texaco Lubrication Engineer help you. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write:

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